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J. N. K. A. M. D.

CONTENTS

ORIGINAL ARTICLES

Tuberculosis in the Lungs.—By Sir Graham Steward, B.Sc., M.B.,
M.A., D.O., M.D.

Respiratory Tuberculosis in Infants.—By E. S. S. S. S.,
M.B., M.A., D.O., M.D.

On the Medical and Pathological Aspects of the Tuberculous
Pulmonary Lesion.—By J. N. K. A. M. D.

Insurance of the Lungs in the Tuberculous Process.—By J. N. K. A. M. D.

On the Pathology of the Lungs in the Tuberculous Process.—By J. N. K. A. M. D.

On the Pathology of the Lungs in the Tuberculous Process.—By J. N. K. A. M. D.

On the Pathology of the Lungs in the Tuberculous Process.—By J. N. K. A. M. D.

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ORIGINAL ARTICLES.

TRAINING IN TUBERCULOSIS.

By SIR GERMAN WOODHEAD,

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Member of Royal Commission on Tuberculosis (1901-12), etc.

THE article by Sir Henry Gauvain in the January issue of this Journal directs attention to a matter of fundamental importance—training in tuberculosis, not of the patient but of the doctor. I am glad to fall in with the suggestion of the Editor that I should concisely formulate my own views on this pressing subject.

Dr. Varrier-Jones and I, in our work dealing with Industrial Colonies and Village Settlements for the Consumptive¹ and elsewhere,² have expressed ourselves somewhat freely on this matter of training in tuberculosis, and although I am far from convinced that an Alton or a Papworth is entirely dependent for its success upon the "man at the helm" or "in the engine-room," I am at one with Sir Henry Gauvain that until medical men receive adequate training in the diagnosis of consumption, especially in its early stages, the treatment of the consumptive and in the administration of institutions, after-care supervision, and other forms of tuberculosis service, little advance will be made in the effective organization of curative and preventive methods and of satisfactory agencies for the control of tuberculous infection.

Scotland and Wales, with their Chairs in Edinburgh and Cardiff deal-

¹ "Industrial Colonies and Village Settlements for the Consumptive." By Sir German Woodhead, K.B.E., and P. C. Varrier-Jones, M.A. With Preface by Sir Clifford Allbutt, K.C.B., M.A., M.D. Cambridge: University Press, 1920.

² See article in *Lancet*, January 29, 1921, p. 256 *et seq.*

ing with tuberculosis, are, in this matter, undoubtedly far in advance of other educational and research centres of the United Kingdom, but it is obvious that the teaching given from these Chairs must, under present conditions, likewise depend very largely on the experience, driving power, and knowledge of the occupant of the Chair whose standards other than those set up from his own experience are, under present conditions, necessarily somewhat limited. As yet there is not, as in medicine and surgery, any standard or mass of information the outcome of the experience of a large body of teachers. There has been no full exchange of ideas, no broad general outlook in the consideration of the different methods of treatment and modes of dealing with consumption and the consumptive, with the result that there has been developed an intolerance and a limitation of outlook both of which have made against the evolution of any complete system of operations such as that for which Sir Henry Gauvain pleads. Does not Sir Henry's own article, excellent as it is, afford evidence of the very limitation of which I speak?

For some time past we have had on the stocks in Cambridge a scheme for the training of graduates and senior students in the clinical and administrative work of the tuberculosis officer. Owing to lack of funds, however, and to the pressure of other calls we have, as yet, been unable to bring it within the range of practical politics, but we are still pressing this on, and I am glad to know that the importance of such a scheme is being pressed upon the public by such a high authority as Sir Henry Gauvain.

If any real advance is to be made in the organization and administration of an effective tuberculosis service in this country some adequate system will have to be devised whereby both medical undergraduates and graduates, and especially those who propose to take up the responsible duties of a tuberculosis officer, are thoroughly trained. This question might, with advantage, be discussed in the several conferences which are to be held this year for the consideration of the tuberculosis problem.

POST-GRADUATE INSTRUCTION IN
TUBERCULOSIS.

By D. BARTY KING,

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Dealing with Tuberculosis in London," etc.

WHILE post-war schemes for dealing with tuberculosis, such as the provision or better organization of sanatoria, tuberculosis dispensaries, hospitals, open-air schools, village colonies, industrial settlements, etc., are being pushed forward, it is desirable that we should not lose sight of the importance of seeing that those who are to work the machinery, from the medical side, and on whom success or failure largely depends, shall have every opportunity of obtaining, as far as is practicable, a special knowledge of tuberculosis in all its bearings.

To acquire an expert knowledge of tuberculosis, especially where it is intended to be utilized in the tuberculosis service, as a tuberculosis officer or otherwise, not only is a skilled clinical knowledge of tuberculosis essential, but also a knowledge of certain aspects of those subjects which are bound up with it, such as public health, bacteriology, dietetics, and radiology. I think that there is no doubt that the present opportunities and, above all, the time at the disposal of the undergraduate, do not make it easy for him to acquire a special knowledge of tuberculosis. Many would agree, that even if the facilities were available, few would take advantage of them, considering the strenuous task already imposed on the undergraduate by the many subjects in his curriculum, and which are necessary for his degree. Although an advance has been made in promoting undergraduate facilities, as at Edinburgh and Cardiff, by the foundation of Chairs of Tuberculosis, it seems to me that the most opportune time for acquiring a comprehensive and special knowledge of this disease is after graduation.

In this connection, let me review briefly what has been the position in London during the past few years. It will be granted that the large general hospitals, whose teaching is essentially undergraduate, have presented few opportunities for post-graduate instruction in tuberculosis. On the other hand, chest hospitals, such as the hospital for consumption at Brompton, the City of London Hospital at Victoria Park, and the Royal Chest Hospital, with their tuberculosis dispensaries, which possess as abundant and suitable material for instruction in pulmonary tuberculosis and other diseases of the chest as can be obtained in any other city in Europe, have attempted for some time past to provide post-graduate instruction by open lectures, comprehensive, and even

intensive courses. I think it will be granted, that the endeavour to meet what seemed to be the necessary requirements of those who were likely to avail themselves of these courses has not proved altogether successful. It must be allowed, however, that the difficulties for physicians attached to tuberculosis institutions, and for others, in finding the necessary time to attend such courses are great. It is also to be borne in mind that graduates who intend to specialize in tuberculosis, and to hold posts in the various tuberculosis institutions, can do so without having attended any such course of instruction. However, I think the time has now come when it is highly desirable that those who are to occupy these posts, where expert knowledge is required, should have attended a course of instruction in tuberculosis which would guarantee that a high standard of knowledge on the subject had been attained. What is required is that all the available resources for giving intensive and yet comprehensive practical instruction in tuberculosis should be organized and placed within the reach of all who wish to specialize in this subject, and any others who would care to avail themselves of the opportunity.

If it is considered necessary that such courses should be instituted, it is equally necessary that, in the interest of all concerned, they should have some standard value. I would suggest that provision should be made by certain examining bodies for the institution of a "Diploma" in tuberculosis, and for the recognition of certain courses of instruction as qualifying to sit for it.

I am sure everyone will agree, that it is undesirable to increase the number of diplomas in special subjects unless on exceptional grounds, but I think that a good case can be made out for the granting of a diploma in tuberculosis by certain examining bodies such as the University of London, etc., in view of the great national importance of combating tuberculosis, which is regarded as the most prevalent of all infectious diseases. I feel certain that if this suggestion had the support and co-operation of the Ministry of Health, the examining bodies concerned, and the various tuberculosis authorities, medical and administrative, it would bring about what is much desired at the present time, namely, a living stimulus to an organization of all the available facilities for instruction in tuberculosis. Such instruction would also in time appeal to others apart from those specializing in tuberculosis, including graduates from other countries. The Committee recently appointed by the Ministry of Health to inquire into post-graduate medical education will no doubt deal with tuberculosis, and their scheme will be awaited with much interest.

ON THE METHODS AND PRINCIPLES OF CLASSIFICATION IN PULMONARY TUBERCULOSIS.

By FREDERICK R. WALTERS,

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Author of "Sanatoria for Consumptives," etc.

CLASSIFICATION in pulmonary tuberculosis is needed for administrative or for clinical purposes, from a collective or an individual point of view. The principles which should guide us in these various cases are the same, but their application is necessarily different.

In every case we should have groups of the same nature, so as to be able to compare similar material under similar conditions, and should make our chief grouping from relatively enduring characters and our subclasses from those which are less permanent; our groups should be capable of accurate definition, mutually exclusive, and covering the whole ground; and if our classification concerns the general practitioner in an isolated district as well as the expert with full laboratory facilities, it must depend solely on factors which can be recognized and measured by simple means, not requiring X-ray pictures, complement fixation tests, or post-mortem examinations.

For clinical service we need a more complete analysis of cases than for administrative purposes; but we can only use a few of the chief factors for our classification, leaving the rest for condensed case summaries by which to estimate progress and the effect of remedies. It is the absence of such analysis which destroys the value of published statistics on the results of tuberculin or sanatorium treatment or of other special remedies, but a classification to include all the necessary factors would be much too complicated for general use.

After dividing our cases according to age, sex, and the existence at some time (or otherwise) of tubercle bacilli in the sputum, there are three main data required for a practical classification: (1) The nature and amount of local changes; (2) the degree of functional disturbance; (3) the presence or absence of serious complications. Any classification which ignores these three essential factors will not give a true picture of the gravity of the case.

The degree of constitutional disturbance is not at all invariably proportional to the amount of local change, for we may have a very limited lesion with very severe general disturbance, and *vice versa*; so that we must subdivide each anatomical group according to the degree of functional change, which (with a ternary classification) makes a

minimum of nine subclasses. There are great advantages in a ternary classification. Where we are dealing with a long chain of cases of all degrees from very slight to very formidable, it is much easier to separate two extremes, leaving a middle group, than to find a dividing line between slight and severe, acute and chronic, or any other binary method. This is recognized by implication in all the chief systems of classification. Therefore I recommend three anatomical classes, each divided into three functional subclasses. The former should be primary, as they depend on much more enduring factors.

An Anatomical Grouping of Patients.

An early classification according to the stage arrived at in the tuberculous focus—(a) *infiltration*; (b) *softening*; (c) *cavitation*—has been abandoned in this country, as well as in Germany and America.

Progress of disease is not often alike in different parts of the chest, and such changes as can be detected clinically are not a reliable measure of the gravity of the case. The *presence or absence of râles* may vary from day to day, and is largely dependent on associated bronchitis, and unsuitable for a main classification. The same is true of the *distribution of the lesions*. Moreover, the *extent and nature of the lesions* have a very important bearing on chances of recovery; but there are at least four varieties of change—(a) *granuloma*; (b) *caseous material*; (c) *fibrosis*; (d) *cavitation*—so that we should need twelve anatomical subclasses if they were used as criteria, which would be unworkable.¹ It was in order to overcome this difficulty that the *Turban* and *Turban-Gerhardt* systems were devised, in which the *degree of local damage* is estimated, apart from the particular variety of damage. It is quite easy to distinguish two such degrees clinically, the one ("slight disease") represented by scattered foci or infiltration in the given area, the other ("severe disease") by dense or confluent foci or consolidation. In the T. and T.-G. systems "severe disease" is reckoned to be twice as great an interference with local function as "slight disease," so that severe disease of half a lobe is equivalent to slight disease of one lobe. *Fibrosis* is not specially mentioned; but it can also be distinguished as of two degrees, so that whenever it results in marked dulness and decided diminution of movement and air entry it would be reckoned as severe disease. *Caseation* and *excavation* would always be of this nature, since they result in total abolition of the respiratory function in the affected part. No great error can result from this convention, which is accepted by implication in Lawrason Brown's definitions for the American Sanatorium Association,² and is used in the majority of existing sanatoria. Qualifications can be put

¹ See article by Dr. Niven Robertson in *Tubercle*, December, 1920.

² See *Journal American Medical Association*, January 30, 1909.

into the periodical summaries if advisable. *Miliary* changes consist in scattered foci usually widely extended; their chief differentia lies in the functional disturbance. The *unit of extent* in the T. system is one lobe for slight or half a lobe for severe disease. In the T.-G. system an additional unit (represented by an apex) is introduced for the least extensive group, enabling us to distinguish really early cases. If these units are accepted, Dr. Niven Robertson's suggestion should be adopted, to regard the right middle lobe for this purpose as part of the right upper lobe.¹ The original T.-G. method was entirely spoilt by an unnecessary rule by which each case was classified according to the lesions on the more affected side alone, instead of the total lesions. This was corrected in the draft scheme (unissued) of the late Local Government Board.

A Modified Turban-Gerhardt Classification.

If we adopt a modified T.-G. group of cases of pulmonary tuberculosis it might be arranged as follows:

GROUP I.	GROUP II.	GROUP III.
Strictly limited lesions. Slight damage affecting more than the volume of an apex, or the equivalent elsewhere.	Lesions of medium extent.	Extensive lesions: Slight damage affecting more than the volume of one lobe, or severe damage affecting more than the volume of half a lobe. In the case of mixed lesions, if the amount of slight damage added to twice the amount of severe damage totals up to more than one lobe, the case falls into Group III.

A Division into Functional Subclasses.

In estimating the gravity of any case clinically, we pass in review the disturbance attributable to the disease in each physiological system of the body. It is usually not difficult to group cases functionally (mainly by systemic disturbance) into A. *slight*, B. *moderate*, C. *severe*; and if we call these A, B, and C, we get nine subclasses as under:²

I.A, I.B, I.C; II.A, II.B, II.C; III.A, III.B, III.C.

This covers the whole ground; the subclasses can be variously grouped together for different purposes, and any case of pulmonary tubercle can be included, provided that the extent and intensity of the local lesion can be estimated. In a county classification for which I was largely responsible, the few cases which could not be classed anatomically were put into a separate group "extent unknown."

¹ *Loc. cit.*

² See also Dr. John Guy's article in *Tubercle*, October, 1919.

A Statement of Definitions and Complications.

The definitions of the above grades of disturbance can be enunciated as follows:

A. Slight constitutional disturbance: No marked loss of weight or strength; maximum pulse-rate at rest not over 90; maximum temperature at rest not over 99° F. (mouth) or 99·2° (rectum) for men, 0·6° more for women; no marked digestive disturbance.

B. Intermediate between A and C.

C. Severe constitutional disturbance: Extreme weakness or emaciation; maximum pulse-rate at rest 96 or more; continued pyrexia, or maximum temperature at rest over 101·3°;¹ or persistent vomiting.

All cases the position of which is doubtful should be included in B. Any other functional changes of importance would be included in the periodical summaries, but not in the classification.

Any complication, whether tuberculous or otherwise, which might materially endanger life, such as tuberculous laryngitis, peritonitis, meningitis, epididymitis, diabetes, heart disease, kidney disease, should be taken into account in classifying cases. To prevent unnecessary multiplication of subclasses, any case with such or similar complications should be included in Group C. In doubtful cases the complication should be relegated to the summary alone.

Case Summaries.

There are four chief sets of facts to be included in a summary intended to record progress: (1) The anatomical condition; (2) the systemic disturbance; (3) the respiratory symptoms; (4) capacity for exercise or work. If these are represented symbolically² and their degree given numerically (*e.g.*, L₂, S₁, R₂, Tb₂, E₂, W₀ = Group II., with little systemic disturbance, moderate cough, tubercle bacilli in moderate numbers, walking capacity three hours, working capacity nil), and recorded on an index card, we can quickly estimate progress.

If we only record "much improved" or other comparative statement, comparison with other summaries is impossible. Any other relevant factor can be put into brackets after the respective symbol. In cases with a dangerous complication, it is this which matters most, and a corresponding record should be made.

¹ See Transactions of International Conference on Tuberculosis, Copenhagen, May, 1904.

² See article by Dr. Niven Robertson, *loc. cit.*

INSURANCE AGAINST SICKNESS IN EX-SANATORIUM PATIENTS.

By JAMES WATT,

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THE average patient suffering from pulmonary tuberculosis has, without efficient after-care, only a poor chance of retaining his health after discharge from the sanatorium. Hitherto after-care has been crippled by lack of funds. To look to the State at the present time for financial help in the way of a subsidy for the civilian ex-patient is hopeless, and every other possible aid is worthy of critical examination. The class here dealt with—namely, those whose working capacity is more or less completely restored by treatment—have less claim on the State or on outside assistance than those in worse case, and require usually no more than guidance and instruction in self-help to tide them over the first two or three years till they become more or less good lives. To encourage employers of labour to engage ex-patients in suitable occupations without imposing a financial burden on them, and to take early, and by timely treatment to cut short slight relapses, while assuring for the ex-patient a sufficient income for the maintenance of himself and his dependents during his relapse, it is suggested that much more should be done to organize self-help by means of insurance among ex-patients. It is true that they are second-rate lives, and they must bear the burden among themselves, but the writer is satisfied that a large number of ex-patients would be willing to forgo immediate advantage for ultimate gain. If there were less difficulty in placing such persons in new and healthy occupations or situations, doctors would be more ready than at present to advocate change to healthier occupations, and patients more ready to follow this advice.

Barnes estimates that employment at a sanatorium increases the expectation of life of tuberculous persons by 25 per cent.¹ If, as is quite probable, this is true, it follows that all sanatoria ought to be staffed with the tuberculous, provided that the service given equals in quality that of healthy employés. Most people would agree that the more intelligent service given by a tuberculous staff more than makes up for the inconvenience caused by occasional breakdowns.

The main idea is that a group of tuberculous persons employed by an institution should form themselves into a benefit club, to the funds

¹ See *American Review of Tuberculosis*, vol. iii., p. 491.

of which they would contribute by weekly deductions from wages when in health, and from which they would draw, during temporary breakdown of health, sufficient benefit to maintain themselves and their dependents. The tuberculous man, relieved of anxiety regarding the maintenance of his family during his disablement, would seek treatment promptly and would be willing to devote sufficient time to secure his restoration to health. This method of insurance would be independent of, and supplementary to, National Health Insurance. While it could be best applied in the case of an institution, it might also be applied to a group of tuberculous persons employed in a business—say the staff of a golf-course—and even possibly, though with greater difficulty, to a group of persons scattered through many businesses. In the latter case the local After-care Committee might act as the administrative centre.

The tuberculous ex-patient's income during sickness ought to fall very little short of that during health, hence the premiums would naturally be high. Their amount would depend on the probable sickness rate, which can only be found by experience, and is now being investigated by a committee of sanatorium superintendents. An arbitrary figure would first be taken, which might be expected to do a little more than cover the anticipated excess of sickness over the average sickness rate provided for by the National Health Insurance Act. Suppose the excess sickness rate is taken at 10 per cent.—that is, an average period of incapacity due to tuberculosis of about five weeks annually—in order to insure full benefit, a deduction of 10 per cent. would be made from every member's wages during employment. It is assumed that in a club of this sort administrative expenses would be trifling. A certain reserve fund would at first have to be raised by denying entrants to the club any right to draw benefit during the first two or three months of their membership, and, to keep the fund solvent, some limit, such as three months, would have to be made to the period during which a member could draw benefit in any one year. If at the end of the year there were a surplus to the credit of the fund, this might be distributed, subject to maintaining the reserve fund, among members in proportion to their stake in the fund. If the excess sickness rate exceeded 10 per cent., premiums would have to be increased or benefits reduced. Such a scheme would naturally be managed by a committee on which the members, as well as the employer, would be represented. In the case of an institution it is suggested that the medical head be the chairman. In case of disputes—as, for example, to prevent doubtfully tuberculous persons from being exploited or unsuitable cases from being engaged—the local tuberculosis officer might act as independent referee. It is believed that even with such high premiums as 10 per cent. of earnings, the more intelligent

type of ex-patient would gladly join such an insurance scheme in order to secure healthy employment, and without materially reducing the standard of living of his family. Many minor details require to be worked out, and the scheme has only a limited application. Even so, however, it is better than no attempt at all to provide for the insurance of the tuberculous.

"IN THIS SIGN": A STORY OF THE TUBERCULOSIS CRUSADE OF THE DOUBLE- BARRED CROSS IN THE UNITED STATES.

By PHILIP J. JACOBS,

PH.D.,

Publicity Director of the American National Tuberculosis Association.

WHEN Dr. Edward Livingston Trudeau discovered in the early eighties that tuberculosis could be cured by the application of the principles of right living, with rest, fresh air, and good food, the American tuberculosis crusade of the double-barred cross was launched. The crusade was without an emblem until, in 1905, after the National Tuberculosis Association had been formed, the double-barred cross, the symbol of international warfare against the white plague, was adopted as the sign under which the American crusade should be carried on. "*In this sign*" the fight against tuberculosis in the United States is being waged, and "*in this sign*" the leaders in the fight believe that this disease, which to-day takes a greater toll in death and sickness than any other single disease in America, will be conquered. The story of the American crusade of the double-barred cross as organized under the leadership of the National Tuberculosis Association may be concisely summarized as follows.

The History of the Crusade epitomized.

From small beginnings the campaign against tuberculosis in the United States has developed in the last fifteen years to one of the strongest and best organized social and public health movements in the world. The National Tuberculosis Association and its affiliated agencies, so prominent European authorities say, is to day recognized as a model for organization and efficiency everywhere.

For those who desire the story in a nutshell, the tuberculosis campaign in the United States may be epitomized in three paragraphs:

64 THE BRITISH JOURNAL OF TUBERCULOSIS

1. The death-rate from tuberculosis has fallen since 1904 from over 200 per 100,000 population to approximately 14.5 per 100,000, a decline of about 27 per cent. as contrasted with a much smaller decline in the general death-rate in the same period.

2. This decline in the death-rate computed in terms of lives means a saving of approximately 50,000 lives a year in the United States alone.

3. In 1904, when the National Tuberculosis Association was organized, there was only a handful of agencies concerned with the preventive movement against this disease. The entire expenditure of all agencies of this character was less than \$100,000 a year. To-day there are over 1,100 such associations, and the annual expenditure of these preventive organizations is over \$4,000,000, while the expenditure of public agencies engaged largely in the treatment of tuberculosis aggregates over \$30,000,000 annually.

The Presentation of the Problem.

The need for a tuberculosis campaign in the United States, as led by the National Tuberculosis Association, may be visualized thus :

There are, according to the best estimates, 1,000,000 active cases of tuberculosis in the United States, with an annual death-toll of approximately 150,000. There are at least another 1,000,000 inactive, arrested, or latent cases of tuberculosis. From 70 to 95 per cent. of the population are infected with the germs of the disease.

The problem that the tuberculosis movement seeks to solve is a threefold one : First, to provide care and treatment for those who have the disease ; second, to prevent those who are infected with it from breaking down with active tuberculosis ; third, to control the spread of infection from those who have it to those who do not have it.

In the solution of this problem the National Tuberculosis Association and its affiliated organizations have moved forward steadily during the last fifteen years. In 1904 the Association was organized at a meeting of physicians and laymen held in Atlantic City. Starting out with the fundamental conviction that tuberculosis is curable and controllable, the Association has gradually developed the following functions and principles :

Education.—The tuberculosis exhibit organized by the National Tuberculosis Association in 1905, which subsequently travelled thousands of miles, was the first demonstration of its type. It aimed to show in a graphic manner how tuberculosis can be cured and prevented. Following this pioneer effort, the National Association has, by means of literature, lectures, newspaper publicity, posters, motion pictures, exhibits, and in a multitude of other ways, endeavoured to reach the general public with its educational message. The

educational programme of the National Association has developed along two lines: First, an endeavour to convey to the general public a knowledge of the nature, treatment, and prevention of tuberculosis; and second, an endeavour to bring to specific groups a sufficient amount of information to enable them to organize State and local campaigns against this disease.

Study and Investigation.—As might have been expected, the National Association, on entering a pioneer field, was obliged to study the problem in its various medical and social manifestations. The Association has from the very beginning realized that the function of research, both directly and indirectly, is one of its chief responsibilities. Through its annual meetings, transactions, journals, and in other ways, it has spurred physicians and others, individually and in groups, to medical and social research in regard to tuberculosis. The Association believes that the first need in any local community programme is a thorough study of the problem.

Organization.—In order to provide the machinery necessary for the control of tuberculosis in any community, organization has been found necessary. The National Association aims to secure for each community as a minimum fighting equipment against tuberculosis such aids as these: (a) Aids in diagnosis, such as medical consultants, dispensaries, nurses, etc. (b) Aids in treatment, such as sanatoria, hospitals, open-air schools, nurses, etc. (c) Aids in prevention, such as anti-tuberculosis associations, educational machinery, medical examination, and other means devised to build the resistance of individuals and groups. (d) Aids in research, such as physicians, laboratories, social workers, nurses, etc. The National Tuberculosis Association, in exercising its function of organization, has developed State and local associations in every part of the country. There are now nearly 1,100 such. The Association believes that if associations are to be effective they must be maintained by full-time secretaries who are devoting their entire time and energy to this particular problem.

Standardization.—The National Tuberculosis Association believes that it is not enough to bring into existence an organization or an institution for the treatment of tuberculosis. The function of the National Association in this respect is to see that the proper standards of work are provided and maintained. In order to do this, the Association has developed a staff of experts in various matters relating to tuberculosis programmes, institutions, nursing, education, research, etc., and is seeking to make every dollar put into tuberculosis work secure a full dollar's value in return to those who contribute it.

Demonstration.—The National Tuberculosis Association stands for the principle of demonstration as a vital function of any private or non-governmental agency, national, State, or local, and appreciates that

public funds cannot be used for experimental purposes. The Association has on numerous occasions demonstrated new ideas in the treatment and prevention of tuberculosis. Among the principal demonstrations of this kind has been the Framingham (Mass.) Community Health and Tuberculosis Demonstration, conducted by the National Association and financed by the Metropolitan Life Insurance Company, in order to show how an average American community, with proper resources, might be able to reduce its death-rate from tuberculosis and purchase improved health and freedom from disease. The results of this demonstration to date have been most gratifying.

Legislation.—In federal, State, and local legislative bodies, the Association helps to promote laws and ordinances for the control of tuberculosis. It is recognized that tuberculosis is fundamentally a public health problem, and that its control is vitally bound up with that of other diseases. The Association has always sought for the broadest type of legislation, such as the creation of State and local health departments, employment of public health nurses, establishment of general and tuberculosis hospitals, in addition to specific legislation dealing with the control of tuberculosis itself.

Plan of Anti-Tuberculosis Work.

The National Tuberculosis Association is an organization of laymen and physicians. It has a membership of approximately 4,000. It represents every part of the United States and a number of foreign countries. It is governed by a Board of Directors representing the geographical and other interests involved in the campaign against tuberculosis. The members meet in annual meeting and the Board of Directors and the Executive Committee meet from four to eight times a year. The staff of the Association consists of salaried experts in various matters relating to tuberculosis work and is organized into six different services as follows: administrative, field, medical, Modern Health Crusade, research, and publicity and publications. The work of each service may be outlined as follows:

Administrative Service.—The administrative service, as its name implies, is responsible for handling the organization and administrative detail of the office and staff of the Association. Under it come the direction and co-ordination of the work of the various members of the staff. All of the business transactions of the Association, which during a normal year aggregate as high as \$300,000 and more, fall under this service. The book-keeping and other financial departments are also under its direction. In general, the administrative service is the directing force of the entire organization.

Field Service.—The field service, closely related to the administra-

tive service, is immediately responsible for carrying out the Association's policies in the field. This is done largely by personal visits of the special field staff. Through surveys, individual conferences, group conferences, institutes, correspondence, and in many other ways, the field staff keeps in constant touch with the various activities throughout the country. For purposes of convenience, the country is divided roughly into certain field districts.

Medical Service.—The medical service has four distinct lines of work: (a) The handling of all correspondence and other matters of the Association involving questions of medical detail, such as inquiries from patients regarding advice in the treatment of tuberculosis and the stimulation and promotion of medical activities in State and local associations. (b) The promotion of medical education with particular reference to tuberculosis through local and State associations, medical schools, conferences, and in other ways. (c) The establishing and promotion of standards for construction and maintenance of sanatoria, hospitals, and open-air schools, of which there are nearly 2,000 in the United States, and the study and promotion of occupational therapy, training, and placement of arrested cases of tuberculosis. (d) The promotion and standardization of tuberculosis nursing. The secretary for nursing is in constant touch with the development of nursing work, and by means of conference, correspondence, and publication of articles, helps to promote interest in tuberculosis nursing and to co-ordinate the nursing activities of tuberculosis associations with those of other State and national agencies in the field.

Modern Health Crusade Service.—The Modern Health Crusade service is in immediate charge of the Modern Health Crusade, a movement for the health education of school children. Over 6,000,000 children were enrolled in the Crusade in 1920. This service originates new ideas for the Crusade, publishes literature dealing with the programme and organization of the work, handles supplies necessary for carrying on the work, which in 1919 amounted to over \$125,000, and by conference, correspondence, and bulletins, stimulates and promotes interest and high standards. Every State organization and most of the local organizations are doing Crusade work.

Research Service.—The research service falls into certain definite lines, as follows: (a) The study of particular problems, such as the indigent migratory consumptive, the economic loss from tuberculosis, the decline of the death-rate, etc. (b) The editing and preparation for publication of the various monographs and pamphlets put out by the Association. This involves collecting of new material, such as that for the Tuberculosis Directory, the preparation of the *Transactions*, and the compilation of information on new literature and new happenings for the *Bulletin* and the *Journal of the Outdoor Life*. (c) Cataloguing,

filing, and indexing of the literature, books, and pamphlet material of the office, so that it may be made available for immediate study by all members of the staff and by others who are interested. The Association library is gradually developing a complete bibliography on all of the social phases of the tuberculosis problem and on many of the medical phases.

Publicity and Publications Service.—The publicity and publications service carries on a number of different activities, such as: (a) The handling of publicity, particularly for newspapers, magazines, and other periodicals. (b) The publishing of the *Journal of the Outdoor Life*, the *Monthly Bulletin*, and the *American Review of Tuberculosis*, including the soliciting of subscriptions, securing of advertising, and the editing of these publications. (c) The preparation and direction of the Loan Service, which includes the loan rental and sale of motion pictures, lantern slides, photographs, cuts, special scrapbooks, etc. (d) The direction of the Christmas seal campaign, membership campaigns, and other special campaigns carried on by the Association, together with the promotion of such campaigns in State and local communities.

Framingham Demonstration.—In addition to the work of the six services outlined above, the Framingham Community Health and Tuberculosis Demonstration is under the direction of a special committee of the Association. The Executive Officer of the Demonstration is an Assistant Secretary of the Association, and the work, while conducted at Framingham (Mass.), is in very close relationship to that of the rest of the staff.

Methods of Anti-Tuberculosis Service.

In carrying on its work, the National Tuberculosis Association adopts a variety of different methods. The principal of these may be summarized as follows:

Correspondence and Personal Conference.—The daily mail of the Association at times contains as many as 300 letters, besides a very considerable amount of circular and pamphlet material. The answering of this correspondence, which is of an extremely varied character and from all parts of the world, requires careful and expert attention. These letters range all the way from an inquiry by a patient regarding some phase of treatment, to letters dealing with the establishment of a State programme or a national policy in this or some other country. Circular letters are used to reach workers in the field with messages of general concern.

Conferences and Meetings.—Besides the annual meeting, the Association holds six sectional conferences in different parts of the United States. These conferences are gatherings for workers who are interested in various forms of tuberculosis work. They serve the

purpose of standardizing methods and programmes, and of stimulating new activities. Special conferences on matters of immediate importance are constantly being held in all parts of the country. Two institutes for the training of tuberculosis workers are conducted in New York City each year.

Distribution of Educational Material.—The office of the National Association is a clearing-house for the distribution of all kinds of educational supplies, including motion pictures, lantern slides, pamphlets, circulars, posters, etc. Some of these supplies are furnished free, others are furnished at cost price, singly or in quantities.

Field Work.—Besides the special field staff of the National Association, consisting of several well-trained men, other members also travel on certain special problems. Such problems deal, for example, with the development of a State policy of nursing, or the construction of a county hospital, or the setting up of a State financial campaign. The personal conferences brought about by the field staff of the National Association have greatly helped to stimulate and promote efficiency in tuberculosis work.

Publications.—The Association conducts three monthly publications. The *Monthly Bulletin*, a general "house organ," primarily for workers in the tuberculosis field, is distributed free. It has a circulation of about 12,000 copies. The *Journal of the Outdoor Life* (not as yet the property of the National Association) is a popular journal for lay readers and anti-tuberculosis workers. It seeks to bring inspiration and information to those who are taking treatment for the disease as well as those who are working for its prevention and control. The *American Review of Tuberculosis* is a medical journal for physicians and those interested in the scientific phases of tuberculosis. It is recognized as the leading publication of its kind in the world. In addition to these periodicals, the Association publishes annually a volume of *Transactions*, and at frequent intervals, monographs on certain special topics, such as legislation, the effect of tuberculosis institutions on surrounding property, tuberculosis dispensaries, and the tuberculous negro.

Research.—A staff of special research workers is maintained. The staff is engaged primarily in social research. The results of this work are published in monographs, in the *Transactions*, and in various other publications of the Association. The research staff also aims to encourage study and survey work on the part of other organizations in the field.

Clearing-House.—The Association acts as a general clearing-house for information on all phases of the tuberculosis movement. Through its staff it is called upon to assist in the solution of problems dealing with institutional, educational, organization, medical, and other phases

of the campaign, besides numerous personal and individual problems of patients searching for health in the cure or control of tuberculosis.

Modern Health Crusade.—The Modern Health Crusade is the chief form of educational work originated and directed by the Association. The object of the Crusade is to teach correct health habits to children. It is not so much an organization as a system of education. It is based fundamentally upon the pedagogical principle that children learn by doing, and that they are stimulated in their educational work by tangible rewards. The Crusade, which started in 1916, numbers approximately 6,000,000 children in 1920.

The General Policy of the National Tuberculosis Association.

This can be enunciated under the following headings:

With Associations.—Most of the State associations have been brought into existence through the efforts of the National Tuberculosis Association, and through them in turn the local associations have been organized. In developing relationship with these bodies the National Association has served as a clearing-house of information, acted as co-ordinator, and suggested programmes of activity. It has no mandatory powers for the enforcement of programmes and policies but endeavours to offer such sound suggestions that they are readily accepted. By mutual agreement, however, the State associations submit budgets outlining proposed expenditures of funds received from the sale of Christmas seals.

With Individuals.—With reference to individuals, the Association has always endeavoured to help every person who presented an honest appeal, although it has never been able to dispense relief as such. Its service to the individual applicant has consisted in furnishing advice and reference to those who could administer care rather than in giving such care directly. The National Association does not maintain any institutions for the treatment of tuberculosis.

Adapting Programmes.—The programme of the National Association is entirely one of education, organization, and research. In its organization work it has sought to adapt its programme to the community. It has always recognized that the problems of one section of the country vary from those of another, and that the solution of the tuberculosis problem in an urban community cannot be applied to a rural one. On the other hand, it has found through experience that well-tested methods can be adapted with modifications to almost any part of the United States.

Localizing the Problem.—The National Association realizes that tuberculosis is essentially a local problem, and that the control of the disease must come ultimately through the perfection of community

organization and the development of community consciousness. The national organization may seek to furnish ideas for organization and for standards of work and suggestions regarding methods and programmes, but the ultimate development and achievement of the programme must be local.

Co-operation.—Recognizing that tuberculosis in its various social ramifications reaches almost every avenue of individual and community life, the Association has adopted as a general policy the broadest possible co-operation with health and social agencies, both public and private, that are seeking to relieve human suffering and to promote community betterment. Among such agencies are, for example, the United States Public Health Service and other Government departments, the American Red Cross, the American Public Health Association, and the National Organization for Public Health Nursing.

General Conclusion.

The National Tuberculosis Association is supported entirely by voluntary contributions. It receives no public funds. Its support comes from three sources: first, a percentage from the sale of Christmas seals contributed by State and local tuberculosis associations; second, membership dues; and third, donations.

As the campaign against tuberculosis in the United States has developed, and as the number of State and local tuberculosis associations has increased, the responsibility for community organization has been shifted more and more to this latter group of agencies. The National Association has in the nature of the case become more and more a service agency, and at the present time is almost a federation of State and local associations. The future of the National Association lies along the lines (1) of standardization of effort, (2) of service to State and local organizations, and (3) in serving as a clearing-house for information, supplies, etc. The National Association also is making for itself a definite place in the co-ordinating of those other national health agencies that are allied to the tuberculosis movement, the development of more friendly relations with tuberculosis associations in other countries, and the promotion of international relationships.

ON THE STABILITARY REACTION OF THE BLOOD IN PULMONARY TUBERCULOSIS.¹

BY A. WESTERGREN,

M.K., OF STOCKHOLM.

IF blood is prevented from coagulating (e.g., with oxalate or citrate), the red blood-corpuscles during gravity and in most pathological states sedimentate faster than in normal conditions. The ancients were acquainted with the so-called *crusta inflammatoria sanguinis* ("buffy coat"), and considered it a particularly important clinical sign, both theoretically and practically. For about a century, however, since the ceasing of blood-letting it has become practically forgotten. In 1917 Fohræus observed this phenomenon afresh in pregnancy, and stated that it was caused by an increased hemagglutination (rouleau formation).² Later he has, *inter alia*, also shown that the ultimate cause of the phenomenon is to be found in the proteids of the plasma; with an increase of the globulin or fibrinogen fraction the hemagglutination develops.³ With a reduced number of blood-corpuscles the sedimentation is also greater, and *vice versa*. In the blood drawn from healthy men, and after it has stood for one hour, the top layer of clear plasma is 2 mm. of height, in that from women 5 to 10 mm. An increased sedimentation (i.e., a reduced suspension stability of the blood) appears as a very susceptible reaction in pregnancy, and also in most pathological conditions; in acute infectious diseases, especially when connected with high fever; in tuberculosis and syphilis; in nephritis; in many cases of malignant tumors; and in certain species of psychosis, etc.

On the basis of Fohræus' first observations I have investigated the suspension stability as it occurs in pulmonary tuberculosis. Here I shall only give a condensed description of my method of performing the stabilitary reaction of the blood (S.R.) and of my chief clinical experience with it.⁴ My material (exclusively clinically attended, often during many years, in the City of Stockholm Hospital for Tuberculosis at Söderby) for the present numbers about 600 men and 100 women,

¹ This abstract of the author's monograph on the subject has been prepared at the request of the Editor of this journal.

² *Hygiea*, vol. lxxx., p. 369 (No. 7), Stockholm, April, 1918.

³ For a comprehensive view of the theoretical sides of these phenomena, and the historical development of their interpretation, reference should be made to Fohræus' complete work—"The Suspension Stability of the Blood," *Acta Medica Scandinavica* (Stockholm), vol. lv.—where the entire problem is fully considered.

⁴ A more detailed presentment is to be found in *Acta Medica Scandinavica*, vol. liv. (Fasc. III.), p. 247.

the majority of which is observed with frequent examinations, the longest period of observation being ca. one and a half year. Altogether about 4,000 tests have been made. The following statements (and especially all figures) refer primarily to male cases.

The Technique of the Test.¹

In a Record syringe, holding ca. 1.2 c.c., a solution of 3.8 per cent. sodium citrate is drawn up, and a fine needle is inserted on the nozzle. By means of a catch arrangement the volume of solution is adjusted to fill exactly one-fifth of the whole volume of the syringe. A cubital

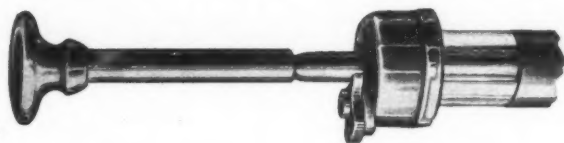


FIG. 1.—CATCH ARRANGEMENT ON A RECORD SYRINGE.

vein is punctured (none, or short stasis), and the syringe is entirely filled with blood. The contents are immediately emptied (needle retained) into a little test-tube, and instantly mixed by reversing the same.² Here the blood can be kept at most five to six hours. For testing the stability the blood is mixed again, and then drawn up into a pipette-tube 30 cm. long, with an inner diameter of ca. 2.5 mm.³ By sucking up and pouring out about five times a homogeneous suspension is secured. Finally the blood is sucked up to 200 mm. of height (marked), and the filled pipette is placed vertically in a stand, where a spring presses the tube with the point against a piece of indiarubber. The time must be noted.

After one, two, and twenty-four hours the test is read off by measuring the height of the layer of plasma in mm. from the lower meniscus of the free surface to the upper border of the blood-corpuscles.⁴

In this way the stability is expressed by three figures (for one, two, and twenty-four hours). If the figure for one hour is compared with the halved figure for two hours, and the bigger of these two figures is regarded as expressing the *sedimentation per hour*, the reaction is expressed closely enough with one figure only—a figure for twenty-four hours of above 130 mm. indicates an oligocythemia.

¹ Complete set of instruments can be obtained from Kirurgiska Instrument Fabriks A. B., Stockholm.

² See Fig. 2, on the right side of the face.

³ See Fig. 2. Before use the pipette-tubes must be well clean and dry.

⁴ If the border is indistinct, the measurement is made to a point where the general frequency of blood-corpuscles seems to begin.

As definite *normal* value I consider up to 3 mm. sedimentation per hour (*i.e.*, at most 6 mm. after two hours), as *doubtful* values 4 to 6 mm. per hour, and higher figures, at least from about 10 mm., as certainly *pathological*.

The Results of Clinical Investigations.

When all the cases examined are brought together, as when separate cases have been frequently observed during a long period, it has become obvious that a reaction of the organism caused by the pathological process (proceeding or just passed off) is reflected in the

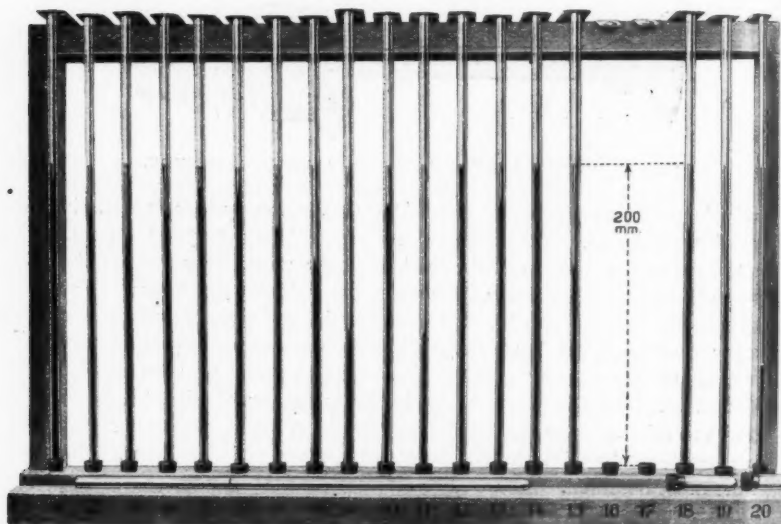


FIG. 2.—STAND WITH TESTS.

The tests Nos. 1-15 have stood about one hour, and show results from 2 mm. (test No. 12) to 110 mm. (No. 9).

The tests Nos. 18-20 have stood twenty-four hours. No. 18, 46 mm. (corresponding to No. 12); No. 20, 127 mm. (corresponding to No. 9).

suspension stability of the blood. And, furthermore, the degree to which the stability is reduced, broadly speaking, corresponds surprisingly well to the extent of activity which the process, clinically interpreted, may be presumed to possess. On the whole, the figures are increased with increase of lesions of the lung tissue, but acute cases show the strongest reactions, chronic cases relatively lower figures, the size of which generally is correlative to the activity of the process.

In Stad. I. (Turban's stages), the most benign cases show normal

THE STABILITARY REACTION OF THE BLOOD 75

values and the probably active cases figures up to ca. 30 mm. sedimentation per hour. In Stad. II., the inactive cases show normal or very low figures, and the active 15 to 50 mm. In Stad. III., the most benign cases frequently show figures below 10 mm., even normal reaction, but the active cases figures from about 30 to 100 to 120 mm. sedimentation per hour.

No single test of an active, or probably active, case has given a normal value, and no case which must be considered quite benign, and certainly shows no signs of activity, has given a high, even a middle-high figure.

The stability frequently is reduced, even to a very high degree, though for a long time quite a normal temperature has been observed, and the S.R. seems considerably more than the temperature to be a reliable measure of the activity of the process. Some problems of fever, mixed infection, etc., perhaps can be elucidated by means of the suspension stability of the blood.

When a series of probatory injections of tuberculin were made, and the patients were followed up with S.R. every or every second day, without exception a typical influence by the tuberculin on the stability has been discovered; in the first place, an obviously increased sedimentation appears, which may be noted earlier and always lasts for a longer time than the reaction of the organism which is manifested in the general state and by careful measurements of the temperature.

Though reduction of the suspension stability is in no way a specific reaction, the S.R. very likely can have a *diagnostic* value for tuberculosis. With normal stability, an *active* phthisis is most probably to be excluded. Ten cases of suspected, but rather improbable, incipient tubercle showed an average sedimentation of 3 mm.; thirty-four cases, probably tuberculous (no bacilli, temperature normal, lesions of Stad. I. at most), sedimented 7 mm. on an average. Especially in the early diagnosis of tuberculosis, however, the figures of the S.R. must, of course, always be very cautiously used.

Evidently, valuable *prognostical* bases can frequently be obtained from the stability of the blood. Observations so far made indicate that the S.R. from this point of view can be of great practical value, decidedly more valuable than the measurement of the temperature. The high figures, above 30 to 40 mm., and especially the very high ones, 60 to 70 mm. and upwards—as reflecting a very strong activity of the process—point to a bad prognosis. (The thirty-one diazo cases show an average sedimentation of 80 mm. per hour.) Low figures, below 10 mm., and particularly the normal values, 3 mm. at most, support a good prognosis. A rather reliable sign of degeneracy is obtained when renewed tests show increasing figures. Manifestly lessened figures, as a rule, correspond to improvement.

Finally, it may be inferred that in pulmonary tuberculosis increases of the serum globulin and also of the fibrinogen protein fraction of the plasma appear during activity of the pathological process. The suspension stability of the blood, as reflecting these proteid changes, however, is interfered with by variations in the number of red blood-corpuscles. Still, in phthisis the disturbing influence of these variations is far less than might be expected. The most important fact seems to be that an erythrocytosis of above ca. 5.5 mil per c.mm. at times can cause somewhat too low figures.¹ Some perturbation may also be caused by diarrhoea, and probably by severe perspiration, but generally all sorts of disturbing influences have rather little importance in practice.

¹ This is to be remembered in cases with artificial pneumothorax and in some cases of very chronic progress.

ASSOCIATIONS AND INSTITUTIONS.

THE TUBERCULOSIS GROUP OF THE SOCIETY OF MEDICAL OFFICERS OF HEALTH.

THIS group was formed in May, 1920, with the object of bringing together all medical men and women engaged in tuberculosis work. All members of the Society whose activities lie in this direction are eligible for membership of the group, whether they work at a sanatorium or similar institution, or do dispensary work. The pathologist engaged in research into the disease is also very welcome. Members of the Society whose time is chiefly occupied with the administrative side of tuberculosis work may also join. The group is self-contained, and has its own council and officers, and when matters dealing with tuberculosis come up for the consideration of the full Society, the Society refers them to the group for discussion before any action is taken. Meetings of the group are held from time to time for the reading and discussion of papers dealing with any aspect of tuberculosis. Since its initiation, the group has drafted a report on the proposals of the London County Council for improving the tuberculosis scheme in London, and the whole matter was investigated in great detail. Any similar matters arising will be dealt with in the same way. Further, the group exists to promote and safeguard the interests of all those engaged in tuberculosis work, to secure closer co-operation with other branches of preventive medicine, and to deal with such matters as the classification of tuberculosis and the collection and co-ordination of statistics pertaining thereto. It is hoped to get together a library of books, reports, and periodicals, representative of the subject. The group has been fortunate in obtaining the services of Professor Benjamin Moore as its first President, and of Dr. H. A. Ellis as Chairman of the Council. The meetings are generally held at the house of the Society: 1, Upper Montague Street, Russell Square, W.C. Those desirous of joining the group are invited to communicate with F. G. Caley, M.A., M.B., D.P.H., Hon. Secretary, 96, East Hill, S.W. 18.

SOCIETY OF SUPERINTENDENTS OF TUBERCULOSIS INSTITUTIONS.

SINCE its inception a year ago, this body has fully justified its existence. It set out with the high aim of advancing the standards and improving the methods of administration, diagnosis, and treatment of tuberculosis in residential institutions. It has secured the active support of the superintendents of most of the large sanatoria and tuberculosis hospitals in England and Wales, with a few from Scotland. Already the membership numbers nearly ninety, of whom over fifty represent public

sanatoria and hospitals, eight sanatoria for private patients, six hospitals for "surgical" tuberculosis, and two training colonies. In addition, ten members are tuberculosis officers, while eight others are medical officers of health, all qualified by previous experience of tuberculosis institutions. That so many points of view are represented gives weight to the Society's expressions of opinion. As the members are so scattered, the work is done mainly in small committees which report to the Society. Provincial members receive these reports in full. The most important subject yet dealt with is the co-ordination of the statistics of sanatoria and allied institutions. A great effort is being made to secure uniformity in the classification of cases of pulmonary tuberculosis and of the results of treatment, and to evolve order out of the confusion of competing symbols for representing physical signs graphically. If the Society, as seems likely, can secure uniformity throughout the country in these respects, it will have achieved much. Practical steps have been taken to raise the standard of training of nurses in tuberculosis work, and standards have been agreed upon in regard to the staffs of medical officers and nurses required in different types of institution. Other committees appointed to consider the questions of dietary in institutions and of the disposal of acute and advanced cases of tuberculosis have now completed their reports. Other subjects under investigation relate to the standards that should be adopted in the construction and equipment of institutions, and the question of devising some scheme of insurance that would assist in the after-care of ex-sanatorium patients. This Society, by the zeal of its members, is doing valuable work, and has given a lead in the recent welcome revival of concerted study of the problems of tuberculosis. The President of the Society is Dr. Jane Walker, and the Secretary is Dr. P. W. Edwards, Bramcote Sanatorium, Nuneaton. The Executive Committee consists of Dr. H. O. Blanford, Dr. Esther Carling, Sir Henry Gauvain, Dr. Marcus Paterson, Dr. S. Vere Pearson, Dr. Niven Robertson, Dr. James Watt, and Dr. R. C. Wingfield.

"CHANNEL VIEW" SANATORIUM.

IN connection with the Southern Convalescent Homes, Lancing-on-Sea, Sussex, which provide accommodation for 220 patients, there is a small sanatorium for early cases of pulmonary tuberculosis. It consists of a large detached house and bungalow, standing in their own grounds of over two acres, close to the sea and facing south. The men's dormitories are in the west wing, while women are provided for in the south block. Each class have separate dining and rest rooms. There are open-air dormitories for both men and women. The terms, which include liberal dietary and medical supervision and reports, are very moderate. It has been the aim of the Committee of Management to cater for the poorer and working-class sufferers. A considerable percentage of the patients recover health, and are able to return to their employment. A visitor, writing of Lancing, said: "The great asset of Lancing is its climate, and those who have habitually visited the place know full well how healthful and invigorating that is. Although so

near to both Brighton and Worthing, its air is superior to that of either place, and perhaps may be said to combine the bracing virtue of Brighton's sea breezes with the balmy sweetness of Worthing." The Medical Officer of the sanatorium is Dr. A. E. Rouse; and the Secretary is Mr. William Chorley, "The Chestnuts," Lancing, Worthing, who will be glad to supply further information.

Schemes for the development of tuberculosis work are being hindered and hampered everywhere for lack of financial resources. Many plans for new sanatoria are reposing in architects' offices. In view of the altered situation brought about by the war and after-war conditions, it would seem wise that the whole problem of tuberculosis should be reconsidered. We would strongly urge the importance of setting up a thoroughly representative Royal Commission to consider all matters relating to the prevention and arrest of tuberculosis. Special commissioners should be sent to study methods and measures which are proving of service in Britain overseas, America, Scandinavia, and elsewhere. There is much that we should now be willing to learn from other countries than our own. Meanwhile, we shall be glad to receive particulars of all new tuberculosis work.

The Mount Vernon Hospital has just issued its annual report for 1920 (central offices and out-patients' department at 7, Fitzroy Square, W. 1, and hospital at Northwood, Middlesex). It is well illustrated, and contains interesting particulars regarding the work of this well-known institution, which receives patients from all parts of the kingdom.

The Boston Tuberculosis Association (offices: 3, Joy Street, Boston, Massachusetts), in its seventeenth annual report for 1920, presents illustrations of the prize designs in the Boston High School Poster Contest, an admirable idea for interesting school-children in antituberculosis educational service.

The International Journal of Public Health, in its last two numbers, contains articles of special interest to tuberculosis officers and others having the care of tuberculous subjects.¹ In the issue for January-February (Vol. II., No. 1) appears an article by Professor K. Shiga, of the Kitasato Institute for Infectious Diseases, Tokio, on "Early Treatment and Protective Inoculation in Tuberculosis." In the same number is a survey of "The Tuberculosis Vaccine of Shiga," and a lengthy review of Calmette's new work. In the March-April issue (Vol. II., No. 2) is a suggestive abstract on "The Exercise Treatment of Tuberculosis," and an article by Dr. P. Armand-Delille on "The Graucher Institute: Its Rôle in the Campaign against Tuberculosis."

The American Journal of Hygiene is a new journal which will interest many of our readers.² It is edited by Professor William H. Welch, and is supported by the De Lamar Fund of the Johns Hopkins University. The first number is full of promise, and contains original articles of exceptional merit.

¹ *The International Journal of Public Health* is published every two months by the Department of Medical Information, General Medical Department of the League of Red Cross Societies, Geneva, Switzerland. Annual subscription, 20s., or \$5.00.

² *The American Journal of Hygiene* is issued bi-monthly, and published by the Johns Hopkins Press, Baltimore, Md., U.S.A. Annual subscription, \$6.50.

NOTICES OF BOOKS.

THE EPIDEMIOLOGY OF TUBERCULOSIS.

"To understand tuberculosis of the temperate zone and of our race it is necessary to know something of tuberculosis as it affects other races which live under different social, economic, and climatic conditions." With these words Dr. Bushnell commences the Preface to his thoughtful and serviceable monograph on the Epidemiology of Tuberculosis.¹ It is a compendium of facts and a judicial discussion of data, and in the gathering of the former and the presentation of evidence on which conclusions have been based the author has explored the available literature of his subject. The work seems to have grown out of an investigation of tuberculosis as met with in the tropics, and particularly as it affects the negro race. The work is timely, and should stimulate inquiry and assist in the direction of further much-needed researches. We are still profoundly ignorant regarding tuberculosis, and many essential points remain quite unknown. "Great difficulty has been experienced in determining what the truth is as to the prevalence and severity of tuberculosis in various parts of the world. With regard to some countries it has proved impossible to form any conception as to what the actual facts are." The philosophic and practical position is admirably expressed by Dr. Bushnell as follows: "If tuberculosis is really ravaging the world, and if nothing can be done to restrain it as a world-plague, the proper course is to dismiss the unpleasant subject from one's mind as completely as possible. On the other hand, if there is a prospect of improvement rather than of deterioration—and the experience of the last half-century should encourage us to believe that this is the case—everyone interested in the prevention of the disease should be anxious to lend a hand whenever possible." The volume contains valuable studies of Tubercularized and non-tubercularized Races, Modes of Infection, Tuberculin Diagnosis, Prophylaxis of the Non-Immunized, Tuberculosis in the Tropics, Tuberculosis of the American Negro and the American Indian, and Epidemics of Tuberculosis. There is also an excellent section on Practical Considerations. The chief interest and main value of the volume centres in its concluding chapter, which provides a summary and presents conclusions. Some of these latter will arouse criticism. Every student of tuberculosis should give them unprejudiced consideration. Space will only permit of our giving certain extracts. "Where tuberculosis is a rare disease the cases that occur will be acute and fatal. When the disease is common the type will be chronic and relatively benign. In other words, contact with tuberculosis affords a certain protection against it. . . . When in a mixed population certain nationalities seem to be more attacked by the disease than others,

¹ "A Study in the Epidemiology of Tuberculosis, with especial reference to Tuberculosis of the Tropics and of the Negro Race." By George E. Bushnell, Ph.D., M.D., Hon. Vice-President and Director National Tuberculosis Association of the United States, etc. Pp. vii + 221. London: John Bale, Sons and Danielsson, Ltd. 1920. Price 20s. net.

given an equally long exposure to it, the explanation is usually to be found in social and economic rather than in racial conditions. . . . The civilized adult almost always, if not invariably, has a tuberculous infection. . . . There is no good reason why disease caused by the virulent and highly resistant tubercle bacillus should form an exception to the law that reinfections do not take place so long as the infectious agent is present. . . . Consumption is not infectious for those who have already a tuberculous infection, even though it be occult. . . . The error of modern times is to deny the protective influence of tuberculous infection against renewed infection from without. . . . Tuberculous infection does not appreciably affect the health of the large majority of the population who remain throughout life immune to tuberculous disease. . . . Modern civilization brings with it inevitably a tuberculization. . . . The infants who die with miliary tuberculosis are sacrificed uselessly—they contribute nothing to the maintenance of the tuberculization of the community. On the other hand, the consumptive, much to be dreaded as he is at close quarters for the unaffected, is indispensable in the present era because he unwillingly provides for that immunization which prevents our race from perishing, as so many other races have perished, when thrust unprepared into the midst of infection. Whether a correction is needed here because the healthy bacillus-carrier could perform this function unaided is a doubtful question, the answer to which can only be obtained by much investigation." Here is indeed much material for thought, and it will doubtless give rise to considerable criticism. Who shall decide between the orthodox and the heterodox? Dr. Bushnell appears to look forward to the coming of a time when Nature's present methods of tuberculization shall be replaced by "a thoroughly scientific method of artificial inoculation in which no life will need to be sacrificed."

SPECIAL WORKS ON TUBERCULOSIS.

The increase in the prevalence of tuberculosis brought about by war and after-war conditions, and the necessity for making provision for tuberculous cases, as well as the desire of scientifically-minded and humane men and women to increase knowledge regarding means aiming at the prevention and arrest of this scourge of mankind, have led to an extension of interest and endeavours, and this is indicated in some measure by the appearance of new works and revised editions of old publications dealing with the tuberculosis problem. We draw attention to several of these.

France is manifesting much activity, not only in regard to the organization and administration of antituberculosis efforts, but in the production of new books dealing with tuberculosis. In our last issue we directed attention to Calmette's notable new work, and now we would urge British students of the subject to study the two volumes bearing the names of Sergent, Ribadeau-Dumas, and Babonneix as editors.¹

¹ "Traité de Pathologie Médicale et de Thérapeutique Appliquée." Publié sous la direction de Émile Sergent, L. Ribadeau-Dumas, L. Babonneix. Tuberculose. Tome I., La Tuberculose en Général, par Émile Sergent, L. Ribadeau-Dumas, Sabourin, Justin Roux, Gimbert, André Jousset, J. Bertier. Pp. 379, avec 16 figures et 2 planches en couleurs. Tome II., La Tuberculose de l'Enfant et de l'Adulte : Les Tuberculoses Viscérales, par L. Ribadeau-Dumas, Émile Sergent, Gimbert,

The work forms vols. xvii. and xviii. of a monumental new system of medicine which is being issued by the well-known firm of medical publishers, A. Maloine et Fils. A number of recognized experts have participated in its production. Some idea of the nature and scope of these timely volumes may be best indicated by an enumeration of the chief contents. The General History of Tuberculosis and its Consideration from the Clinical Standpoint is dealt with by Dr. Émile Sergent; Pathological, Bacteriological, and Experimental Data are presented by Dr. M. L. Ribadeau-Dumas; General Hygiene and Therapeutic Measures, particularly Open-Air Management, Heliotherapy, and Rest, are discussed by Dr. Ch. Sabourin. Dr. Justin Roux deals with Alimentation, Chemiotherapy, Pharmacotherapy, and "Crénothérapie"; Dr. André Jousset with Vaccines and Tuberculins; and Dr. M. J. Bertier with Mechanical and Surgical Measures, including Artificial Pneumothorax and Respiratory Re-Education. The important question of Prophylaxis has been allotted to Dr. M. Gimbert, of Cannes. Tuberculosis in Infancy, Childhood, and Adolescence is expounded by Dr. L. Ribadeau-Dumas. The problem of Scrofula is effectively presented by Dr. Émile Sergent; Acute Tuberculosis is dealt with by Dr. Gimbert; Laryngeal Tuberculosis by Dr. Bellin; Chronic Pulmonary Tuberculosis is by Dr. Bertier, of Grasse, who also provides a valuable bibliography; and Tuberculosis of the Pleura and Serous Membranes by Dr. M. A. Courcoux. Dr. Pierre Labro writes the section on Tuberculous Pneumothorax, and Dr. Ameuille that on Tuberculosis of the Mediastinum, Heart, and Vessels. Dr. Ed. Michon has an essay on Tuberculosis of the Urinary System; Dr. Pierre Pruvost one on Tuberculosis of the Digestive Tract and the Peritoneum; and Dr. Ameuille one on Tuberculosis of the Liver and Spleen. Dr. L. Nadal deals with Tuberculosis of the Meninges and Other Parts of the Nervous System. The work closes with a communication by Dr. H. Grenet on "Rheumatisme Tuberculeux." This enumeration will indicate something of the comprehensiveness of this ambitious treatise. To deal adequately with such a systematic and far-extending work would require several pages of this journal. We venture to think that sufficient has been presented to indicate to all serious students of tuberculosis the necessity for studying these remarkable volumes in their entirety. Special praise is due to the publishers for the admirable way in which the treatise has been produced. The illustrations, and particularly the coloured plates, are admirable.

A second edition has just appeared of Dr. Émile Sergent's "Clinical Studies on Tuberculosis."¹ The numerous articles here reproduced from various French medical journals are conveniently grouped in sections, and deal mainly with symptoms and diagnostic signs, the rôle of the human soil in the pathogeny of tuberculosis, and prognosis and

Bellin, J. Bertier, Courcoux, P. Labro, Ameuille, Michon, P. Pruvost, Nadal, Grenet. Pp. 811, avec 48 figures et 9 planches en couleurs. Paris: A. Maloine et Fils, 27, Rue de l'École de Médecine. 1920. Prix, Tome I., 20 frs.; Tome II., 35 frs.

¹ "Études Cliniques sur la Tuberculose (1908-1920). Avec un Appendice sur les Mesures de Préservation Sociale contre la Tuberculose." By Émile Sergent. Second Edition. Pp. 703, with illustrations. Paris: A. Maloine et Fils, 27, Rue de l'École de Médecine. 1920. Price 20 francs.

treatment. There are a number of valuable communications in which are fully discussed the relationships of syphilis and tuberculosis. Perhaps the most interesting portion of the volume is Part IV., in which are gathered a number of articles on "*La Tuberculose et la Guerre.*" These are of particular value in setting forth the best French opinion in regard to the much discussed and most important aspect of the tuberculosis problem, particularly as it is presented to-day in ex-service men. Dr. Sergent's original and highly suggestive studies merit the serious study of all British clinicians dealing with tuberculous cases in this country.

Many will be glad to welcome a new edition of Sir R. Douglas Powell's well-known and most comprehensive work on the diseases of the lungs and pleura.¹ Sir Percival Horton-Smith Hartley has shared in the responsibilities of bringing this long-approved treatise up to date. The volume now provides the clinician with a complete, reliable, and thoroughly serviceable guide to diagnosis and treatment of all affections of the lungs. Tuberculosis, of course, occupies a prominent place; indeed, over 300 pages are allotted to the consideration of pulmonary tuberculosis. No better introduction could be desired; it is one which specialists can appreciate, medical students understand, and all practitioners find serviceable. The accompanying coloured plates, charts, and other illustrations add much to the value of the text. For the well-selected bibliographical references many will be grateful. The clinical records of cases provide features of special interest. Tuberculosis officers and other medicals taking up the study of tuberculosis and entering upon responsibilities entailed in providing for the care and treatment of consumptives will find the practical directions for supervision and care and therapeutic management of much assistance. With regard to sanatorium treatment, the view is expressed that "for the great bulk of the population this treatment cannot be efficiently carried out except in sanatoria, at all events for the first few months." As to the results of sanatorium treatment among the industrial classes, it is stated that "the general result of treatment in industrial sanatoria is that from 50 to 60 per cent. of the cases taken in the early stage are capable of working from four to five years after leaving the sanatorium." Much serviceable information is supplied regarding the climatic management of consumptives. As to tuberculin, there is no hesitation about the expression of the opinion that "tuberculin as a remedial agent in the treatment of phthisis has been greatly over-estimated," and it is very rightly contended that "in febrile cases the remedy is contra-indicated, the reactive power of the patient being already stimulated to the full by the excessive doses of toxine which are being absorbed." With regard to the production of an artificial pneumothorax, it is urged that "it is for patients in whom the disease is

¹ "On Diseases of the Lungs and Pleuræ, including Tuberculosis and Mediastinal Growths." By Sir R. Douglas Powell, Bart., K.C.V.O., M.D., D.Sc., F.R.C.P., Physician in Ordinary to the King, Consulting Physician and Emeritus Lecturer on Medicine to the Middlesex Hospital, etc.; and Sir Percival Horton-Smith Hartley, C.V.O., M.A., M.D., F.R.C.P., Physician with charge of out-patients to St. Bartholomew's Hospital, Senior Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, etc. Sixth Edition. Pp. xx + 798, with xxxvi. plates and 64 figs., charts, and diagrams. London: H. K. Lewis and Co., Ltd., 136, Gower Street, and 24, Gower Place, W.C. 1. 1921. Price 42s. net.

chiefly confined to one lung, or those whose life is endangered by repeated and uncontrollable hæmoptysis that the treatment is especially suitable." This section of the volume closes with a paragraph of hope, and we venture to quote it: "We may claim therefore that, since our last edition was published, progress in treatment has been made, and we must hope that the day is not far distant when research will place in our hands a specific means, whether medicinal or other, wherewith to combat the disease. This must be the aim of investigators, and we cannot believe that the hope is chimerical." We hope that in the next edition a special section will deal with radiography and radioscopy in pulmonary tuberculosis, and that it may be possible to provide a chapter on this disease as met with in children.

Dr. Clive Riviere's excellent manual on the early recognition of tuberculosis is now in a third edition.¹ It is one of the serviceable "Oxford Medical Publications." The work has undergone careful reconsideration, but comparatively few additions or changes have occurred. It is a thoroughly reliable, up-to-date, and helpful guide for tuberculosis officers and all other medical practitioners desirous of possessing a complete, clear, well-arranged clinical handbook on the diagnosis of tuberculosis, especially in the form of pulmonary tuberculosis in adults and intrathoracic tuberculosis in children. The section on tuberculin merits special praise; it is judicial, informing, and meets the needs of the existing situation. The author does well to insist on the importance of the distinction between tuberculous infection and tuberculous disease, the latter only being of interest to the diagnostician. The sections on the use of Röntgen rays merit special consideration. "In the training of a chest physician they are indeed an indispensable adjunct, but after years of experience with combined X-ray and physical examination, the physician may undoubtedly arrive at a stage where the rays can help him but little in the diagnosis of early disease. He will find that in average cases he can readily dispense with their help, and in cases where his experience and skill in physical signs can only bring him to a provisional diagnosis, the X-rays will, in most cases, advance him no further. But before he has reached this degree of certainty in his physical signs the X rays will remain a very useful monitor to keep him along the right path. Moreover, their routine use occasionally sheds unexpected light on a doubtful case, and materially assists the diagnosis; for this reason they must not be allowed to fall into neglect even in the diagnosis of early cases." Dr. Riviere has provided a much-needed manual, unprejudiced, precise, judicious, and bearing on every page the mark of an experienced and far-seeing clinician. The wisely selected illustrations add to the usefulness of the volume.

Dr. H. F. Gammons has written a simple but serviceable handbook on tuberculosis for the general practitioner.² It is addressed

¹ "The Early Diagnosis of Tubercle." By Clive Riviere, M.D., F.R.C.P., Physician to the City of London Hospital for Diseases of the Chest, Victoria Park, E., etc. Pp. xvi+318, with 35 figs. London: Henry Frowde and Hodder and Stoughton, 17, Warwick Square, Newgate Street, E.C. 1921. Price 15s.

² "Practical Tuberculosis: A Book for the General Practitioner and those interested in Tuberculosis." By Herbert F. Gammons, M.D., Superintendent, Woodlawn Sanatorium, Dallas, Texas, etc. With Introduction by J. B. McKnight, M.D., Superintendent and Medical Director, Texas State Tuberculosis Sanatorium, Carlsbad, Texas. Pp. 158, with 11 figs. St. Louis, U.S.A.: C. V. Mosby Company, 801-809, Metropolitan Buildings. 1921. Price \$2.00.

primarily to American colleagues, but there must be many in this country, especially those engaged in educational propaganda, who will find the manual helpful. The author evidently realizes that if progress is to be made in securing the prevention and arrest of tuberculosis the co-operation of the general practitioner must be obtained, and he should be instructed in regard to ways and means whereby the beginnings of tuberculous disease can be recognized and adequately dealt with. The work consists of twenty-eight chapters, each short and slight, but there are many suggestions which the discerning doctor will find of assistance. Some of the dogmatically expressed statements we cannot endorse, as, for instance, that "the percentage of cases in which artificial pneumothorax is indicated at some time during the process of the disease is undoubtedly large." There are many in this country who would hesitate to approve the contention that "the general practitioner should never use tuberculin except under a specialist's supervision," although the advice may possibly be sound in so far as it applies to American practitioners. The chapter on the use of X rays is disappointing, and the radiograms presented are unsatisfactory. We do not think Dr. Gammons is hardly judicious in concluding his well-intentioned manual with such an unguarded declaration as that "tuberculosis is the most curable of all chronic diseases in case an early diagnosis is made, and early treatment with Nature's processes is instituted." Such a statement is no doubt intended to encourage hope and energize endeavour, but its non-fulfilment in many cases often gives rise to widespread discouragement.

COMMUNICABLE DISEASES.

Dr. F. M. Munson has recently published an excellent students' manual the aim of which has been to provide in one volume a concise and complete presentation of up-to-date information concerning epidemiology and the management of communicable diseases, ashore and afloat. The work has been written primarily from the American standpoint and mainly for the assistance of those likely to be engaged in naval, military, and civil medical and hygienic services.¹ It is a handbook which will appeal to all classes of medical advisers, sanitarians, sanitary engineers, medical missionaries, and the like, who are called upon to fight communicable disease. We commend the work to the study of medical and hygiene teachers and students in this country. The volume is divided into two parts: in the first are chapters on the Causes of Communicable Disease, Infection and Immunity, Dissemination, General Prophylaxis, Disinfection and Disinfectants, Insecticides, Personal Hygiene, Hospitals, and Isolation and Quarantine. There are also admirable sections on Military, Naval, Railway, Municipal, Rural, School, Prison, and Industrial Sanitation; Exotic Hygiene and Sanitation; Sanitary Measures following Great Disasters; and Sanitary Administration. In Part II. detailed consideration is

¹ "Hygiene of Communicable Diseases: A Handbook for Sanitarians, Medical Officers of the Army and Navy, and General Practitioners." By Francis M. Munson, M.D., Lecturer on Hygiene, and Instructor in Military Surgery, School of Medicine, Georgetown University, U.S.A. Pp. xiv + 793, with 36 figures and bibliography. New York City: Paul B. Hoeber, 67-71, East Fifty-ninth Street. 1920. Price \$5.50.

provided of the various communicable diseases. A serviceable section is devoted to Tuberculosis, in which is set forth a concise summary of present-day knowledge regarding this disease as viewed from the sanitarian's standpoint. The reference to immunity deserves to be quoted here: "Human beings must have a certain amount of immunity to tuberculosis, and frequently recover spontaneously from the infection, otherwise the race would probably have ceased to exist many generations ago. The resistance increases with advancing years. This is probably explained by the fact that infections, especially among city dwellers, have occurred in most people of thirty years of age and upwards. Man can, however, resist only a certain amount of infection. The factor of safety is small, as the natural immunity is not strong enough to overcome grave infections. The gravity of the infection is determined by the number of the bacilli, the virulence of the strain, and the frequency of reinfections. Resistance to tuberculosis is increased by the careful observance of personal hygiene, good food, and fresh air, and decreased by dissipation, overwork, poor ventilation, malnutrition, etc. There is no antitoxic immunity, and the tuberculins are not true antitoxins. Such immunity as exists is best explained by the anaphylactic reaction, which helps to protect the subject against invasion by the tubercle bacillus and guards it against spread of the infection after it is localized. There is little resistance to the primary invasion, but the second is followed by a violent reaction. The natural protecting agents, such as the germicidal substances of the blood, phagocytic cells, and antibodies, are concentrated at the point of invasion. Protection against extension of the infection is due to the same processes. The anaphylactic reaction is probably stimulated by small amounts of tuberculin produced within the tubercular area. Where this is not produced autogenously in sufficient amounts, as in chronic lesions of the bones or inactive lesions of the skin or lymphatic glands, the reaction may be stimulated by the injection of small amounts of tuberculin. The power of reaction is destroyed by too large amounts or too frequent dosage. If the mechanism of immunity is thus destroyed and the body offers no resistance, death follows as a result of the infection. Mild infection with bovine tubercle bacilli causes a certain degree of immunity against the human variety. Children who have had glandular tuberculosis, generally contracted through milk, are less apt to have pulmonary tuberculosis in later life. The human variety of tubercle bacilli injected into cattle produces a definite immunity against the bovine strain. This is not without danger to consumers of food products derived from the cattle. Apparent racial immunity is probably due to character and quantity of nutrition, exposure, modes of life, etc." This is all admirably expressed, although contentious points are raised. The whole volume deserves to rank high as a comprehensive and authoritative reference work on communicable diseases.

MANUALS FOR MEDICAL ADVISERS AND WORKS OF REFERENCE.

Dr. E. M. Brockbank and Dr. A. Ramsbottom, of the Medical School of the University of Manchester, have compiled an excellent handbook for students and practitioners on the Clinical Investigation

of Pulmonary Affections.¹ It provides an outline of the authors' own teaching, and has been published at the request of their students. After preliminary chapters on anatomical and physiological considerations and references to certain subjective symptoms and objective signs, the course of a systematic examination is described under the classic headings of Inspection, Palpation, Percussion, and Auscultation. The concluding chapter on Physical Signs of Common Pulmonary Diseases may well be expanded in the next edition. This little handbook is excellent both in substance and arrangement; it will be sure of a welcome from teachers and students, and even experienced tuberculosis officers and experts in chest work will be well advised to read through this condensed, lucid, dogmatic, and generally serviceable manual.

Medical superintendents of sanatoria, tuberculosis officers, and other practitioners dealing with cases of pulmonary tuberculosis, have need for an acquaintance with up-to-date methods of examining the nose, ear, throat, and respiratory passages, and should have a working knowledge of the morbid conditions met with in these regions. A very large number of patients suffering from pulmonary and other forms of tuberculosis are also the subjects of deformities, organic defects, and functional disorders involving the respiratory tract and the structures in close association, and it is of the utmost importance that these should be recognized and effectually dealt with. The handsome, elaborately illustrated, and comprehensive treatise on Diseases of the Throat, Nose, and Ear, just issued by Dr. Dan McKenzie, provides a concise, up-to-date, practical work such as many medical advisers stand in need of.² The coloured frontispiece is a fine reproduction of one of the drawings executed for Sir Morell Mackenzie by Lennox Browne, and recently presented by Mr. E. Mayer, of the firm of Messrs. Mayer and Phelps, to the Royal Society of Medicine. Dr. McKenzie's volume is a lucid exposition of all that is best and most serviceable in modern oro-laryngological work; it is admirably arranged, beautifully got up, and has a very complete index, all points going far to make it an ideal book for ready reference by the busy practitioner. There is a particularly good section on Tuberculosis of the Larynx, with description of the author's method of dealing with suitable cases by galvano-cautery puncture: an illustration is given of the electrodes used. Reference is also made to the injection of alcohol into the trunk of the superior laryngeal nerve as a measure sometimes justifiable for the relief of painful deglutition. With regard to tuberculosis of the ear, met with as a primary disease in infancy and involving the tympanic mucosa, Dr. Logan Turner's view is referred to—namely, that it is probably of bovine nature and milk-borne, the infecting organisms passing up the relatively short and wide infantile Eustachian tube from pharynx and

¹ "The Clinical Examination of Diseases of the Lungs." By E. M. Brockbank, M.D. (Vict.), F.R.C.P., and Albert Ramsbottom, M.D. (Vict.), F.R.C.P., both being Hon. Physicians to the Manchester Royal Infirmary and Lecturers in Clinical Medicine in the University of Manchester. Pp. viii+88, with illustrations. London: H. K. Lewis and Co., Ltd. 1921. Price 4s. 6d. net.

² "Diseases of the Throat, Nose, and Ear." By Dan McKenzie, M.D., F.R.C.S.E., Surgeon to the Central London Throat and Ear Hospital; Oro-Laryngologist to the French Hospital, London, etc. Pp. xv+646, with two coloured plates and 199 figures in the text. London: William Heinemann (Medical Books), Ltd., 20, Bedford Street, W.C. 2. 1920. Price 42s. net.

naso-pharynx. Dr. McKenzie's work, as this necessarily brief notice will indicate, is one which will be of special value to the general practitioner.

In sanatoria, hospitals, and open-air schools for tuberculous children, it is sometimes desirable that the medical officer in charge should be in a position to apply tests for the estimation of degrees of intelligence. An excellent manual, with full directions for carrying out the testing of mentality in children according to the Binet-Simon Scale, has been provided by Dr. Norbert J. Melville. A second and enlarged edition has just been issued.¹ It not only affords full directions regarding the general procedure in gathering and analyzing the data, but supplies also bound up in the volume the actual tests necessary for the carrying out of an investigation by the Uniform Method of Applying the Binet-Simon Scale according to the final revision of Binet and Simon in 1911. There are also materials for the conduct of the interesting Porteus Maze Tests. By the use of this Scale valuable first-aid work can be accomplished, for, as Dr. Healy well says: "For final diagnosis of the mentality of the individual, the Binet test score is simply one out of several main facts to be taken into consideration." Dr. Melville has accomplished a notable service by the preparation of his practical manual, and we direct attention to it here in the hope that medical advisers and teachers dealing with children in open-air schools will use it in making observations on intellectually backward and mentally retarded and defective boys and girls, particularly as a means of recording the effects of hygienic methods of life and natural methods of education on such cases.

Dr. C. P. Emerson's well-known work on the Essentials of Medicine has now passed into its fourth edition, and has undergone thorough revision.² It is a member of the excellent practical series of "Lippincott's Nursery Manuals," and is based upon the author's extensive experience as a teacher of medicine in a medical school and as a lecturer to nurses. The work admirably meets the needs of those requiring a comprehensive Introduction to the Elements of Medicine. It is just the book which medical superintendents expected to undertake lectures in a nursing school will find suggestive and helpful. And we agree with the author that "this book may be attractive to the general reader. It will aid him to understand more clearly the medical problems of to-day, to appreciate more highly a well-trained practitioner, and to co-operate better with his doctor." The volume is lucidly written, and for elementary medical students, nurses, and even laymen will prove really attractive. There is an excellent glossary.

The first volume of "Contributions to the Study of Tuberculosis," from the American National Hospital for Consumptives, is a publication

¹ "Standard Method of Testing Juvenile Mentality by the Binet-Simon Scale and the Porteus Scale of Performance Tests: A Uniform Procedure and Analysis." By Norbert J. Melville, Assistant Director, Mental Hygiene Committee, Public Charities' Association of Pennsylvania. With an Introduction by William Healy, M.D., Director of Juvenile Psychopathic Institute, Chicago. Second enlarged edition. Pp. 162. London: J. B. Lippincott Company. 1920. Price 12s. 6d. net.

² "Essentials of Medicine: A Textbook of Medicine for Students beginning a Medical Course, for Nurses, and for all Others interested in the Care of the Sick." By Charles Phillips Emerson, M.D., late Resident Physician to the Johns Hopkins Hospital, etc. Fourth edition, revised. Pp. 401, with illustrations by the author. London: J. B. Lippincott Company. 1920. Price 12s. 6d. net.

of much interest and promise.¹ It contains, in addition to reports fifteen original studies by workers in the Research Department. The following are among the subjects: The Inhibitory Action of Sodium Cinnamate, Pulmonary Atelectasis as a Source of Confusion in Physical Examination, The Eye as a Portal of Infection in Respiratory Diseases, The Effect of Heat on Experimental Tuberculosis, Artificial Pneumothorax, The Primary Toxicity of Certain Preparations of the Tubercle Bacilli.

The *Country Heart* is a new quarterly which we commend to all who seek natural beauty and the open-air life.² It incorporates the *Vineyard*. Its aim is "to strengthen the love of earth, alike for its spiritual and economic values, believing that the restoration of the land to fruitful uses, and of the traditional crafts to the hand, is essential to normal life; and it will serve as the organ of the Peasants' Arts Guild." The first number contains many suggestive articles, and also gives a series of "recipes for colouring wool in simple and homely ways," which should be of service to many artistic workers in sanatoria and open-air schools.

The well-known firm of Evans Sons, Lescher and Webb, Ltd., have just issued an informing catalogue of their specialities, many of which are products of great value in sanatorium service, and particularly suited to the treatment of many cases of tuberculosis.³

Under the title of "Medicamenta Recentia" Messrs. Allen and Hanburys, Ltd., have recently issued in dainty, compact, practical form an alphabetically arranged manual, giving particulars of their special products. There is also a suggestive therapeutic index.⁴

The third number of *Archivos Españoles de Tisiología* is an imposing issue of more than 230 pages.⁵ There are nine original articles, each of high merit, and also reviews, bibliography, and notices.

Endocrinology is a publication which should interest many of our readers. It is the Bulletin of the Association for the Study of Internal Secretions. With the beginning of the present year commenced vol. v. The Bulletin is issued bi-monthly, and contains original articles, reviews, and a very ably conducted section of abstracts of the best current literature on the subject.⁶

¹ "Contributions to the Study of Tuberculosis," by the Research Department of the National Jewish Hospital for Consumptives. Vol. I. Published by the Hospital, Denver, Colorado, U.S.A. 1920.

² The *Country Heart* is published quarterly for the Vineyard Press, Ltd., 17, Duke Street, Manchester Square, W. 1, by George Allen and Unwin, Ltd., Ruskin House, 40, Museum Street, W.C. 1. Annual subscription, 5s., post free. Single number, 1s. net.

³ A copy of the "Descriptive Catalogue of Pharmaceutical Specialities, Organo-Therapeutic Products, and Bacteriological Preparations," issued from the laboratories of Evans Sons, Lescher and Webb, Ltd., can be obtained on application to the offices at 56, Hanover Street, Liverpool; and 60, Bartholomew Close, London, E.C. 1.

⁴ A copy of "Medicamenta Recentia" will be forwarded to any medical practitioner making application for the same to Allen and Hanburys, Ltd., 37, Lombard Street, E.C. 3.

⁵ The *Archivos Españoles de Tisiología* is edited by Dr. Luis Saye. Redacción: Calle de Aragón núm 232; Administración: Sdad. Gral Publicaciones, Diputación 211.

⁶ *Endocrinology* is published by the Association for the Study of Internal Secretions, 1100-1103, Title Insurance Building, Los Angeles, California. Annual subscription, \$6.00. Single copy, \$1.25.

PREPARATIONS AND APPLIANCES.

THE AURORASCOPE.

TUBERCULOSIS Officers, School Doctors, Consultants, and General Practitioners, are constantly finding the need for some reliable means whereby in the examination of eye, nose, ear, throat, and other parts of the body, effective illumination may be available. This want has now been provided by the introduction of the AURORASCOPE. This ingenious, compact, portable, and efficient equipment enables the diagnostician to be always ready to examine eye, ear, nose, throat, larynx, etc. The outfit includes a dry battery, electric torch, aural speculum, laryngeal mirror, tongue depressor, magnifying lens, etc.



THE AURORASCOPE.

Trans-illumination of the antrum and retinoscopy can also be carried out. Every medical practitioner equipped with an auroroscope outfit can speedily acquire facility in exploring nasal cavities, vocal cords, drum of the ear, pharynx, etc. Moreover, the investigation can be carried out without the necessity of securing a darkened room. This ingenious equipment only needs to be demonstrated to make manifest its many advantages. If we mistake not, this cleverly devised outfit will be appreciated not only by all kinds of doctors, but also by dentists, veterinary surgeons, vocalists, students, nurses and health visitors. The Auroroscope is now available in three forms—the Midget, the G. P. Pocket, and the Hospital Outfits. We have no hesitation in recommending the Auroroscope to readers of this journal.¹

THE "RYSTOS" BINAURAL STETHOSCOPE.

The Tuberculosis Officer and all other medical practitioners responsible for the care of consumptives and other chest cases find that the

¹ The Dees Patent Auroroscope is supplied by the Auroroscope Company, Ltd., 14-15, Fulwood House, High Holborn, W.C. 1. Price £2 2s.

most indispensable aid to effective clinical service is a reliable stethoscope. Of these there are endless varieties—good, bad, and indifferent. One of the best forms is the "Rystos" Binaural Stethoscope, of which we are enabled to give an illustration. It is fitted with thick rubber,



THE "RYSTOS" BINAURAL STETHOSCOPE.

which is an essential feature if adventitious extra-pulmonary sounds are to be excluded. The free movements permitted will be found excellent in actual practice. The stethoscope only needs to be used to be approved.¹

THE RECORDING OF BLOOD-PRESSURE.

The blood-pressure should be systematically taken and recorded in all cases where there is either primary or secondary cardio-vascular derangement. In subjects of intrathoracic disease of every kind this form of clinical investigation should not be neglected. Dr. R. J. Cyriax has drawn attention in this journal to the interesting results met with in testing blood-pressure in pulmonary tuberculosis.² The



THE SANBORN BLOOD-PRESSURE OUTFIT.

researches of Dr. Cyriax and others have proved conclusively the need for extended observations. We venture to urge on medical superintendents of sanatoria and tuberculosis officers generally the importance of taking up this work. A very simple, effective, and readily applied means for the estimation of the blood-pressure is provided by the

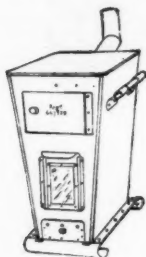
¹ The "Rystos" Binaural Stethoscope is supplied by Reynolds and Branson, Ltd., 13, Briggate, Leeds. Price 20s.

² See article on "Bilateral Maximum Blood-Pressure Observations in Pulmonary Tuberculosis," by Dr. Richard J. Cyriax, in *British Journal of Tuberculosis*, April, 1919, vol. xiii., No. 2, p. 73.

SANBORN BLOOD-PRESSURE OUTFIT.¹ The chief features of this reliable and inexpensive equipment are shown in the accompanying figure. It is, in fact, a compact, portable, aneroid sphygmomanometer, consisting of a strong gauge, an arm band with rubber bag which can be easily inflated, so exercising pressure on the brachial artery, and a controlled valve for regulation of pressure and release of air. The weight of the outfit is only a pound. The actuating part of the gauge consists of a set of diagrams, as in an aneroid barometer, and it is the expansion or contraction of these sensitive air-chambers which gives motion to the indicating hand. The dial is graduated in millimetres of mercury, clear, easily read figures being given for every 10 mm. thus—20, 30, 40, 50, and so on up to 300. Between the figures are five smaller spaces each indicating 2 mm. Both systolic and diastolic pressures can be taken. The instrument offers a distinct advantage over the mercury column, and enables the diastolic pressure to be accurately recorded. The appliance is easy to manipulate. A test can be conducted without difficulty. The arm band is applied like a bandage, and requires no pins, hooks, or fasteners. The gauge, when attached to the sleeve by means of a spring clip, is in full view of the operator, leaving one hand free. The specially constructed release valve allows of fine adjustment being made, and enables inflation and deflation to be carried out almost simultaneously without moving the hand. Although the makers do not claim that the Sanborn is as accurate as a high-grade mercury instrument of the single column type, they guarantee it to be as accurate as the majority of the mercury instruments now in general use. As a matter of fact, the Sanborn gauge is twice tested on a water column, thirteen times as sensitive as the mercury one, before being sent out, and is guaranteed accurate for all clinical purposes. We are informed that a large number of hospitals and sanatoria and thousands of physicians throughout the world are now using the Sanborn Outfit.

THE VICTORY STOVE.

A new form of portable slow-combustion stove has recently been introduced which promises to be of much service in connection with sanatoria and hospitals, open-air schools, colony centres, workshops, home shelters, and other places where an inexpensive, easily controlled, effective appliance for heating purposes is required. The general form and chief features of the VICTORY STOVE are shown in the accompanying figure. It stands 17 ins. in height, 12 ins. wide at the square top, and with base 14 ins. by 9 ins. The weight is approximately 20 lbs. It has in front a sliding mica door, a feeding aperture and a combined ash-tray and ventilator. It offers many advantages: consumes less than one half the coal of an ordinary fire; the heat is distributed evenly; requires but little attention, and will keep in for twelve hours; burns any kind of coke and coal,



THE VICTORY STOVE.

¹ The Sanborn Blood-Pressure Outfit is supplied by the Sanborn Company (London), 11, Victoria Street, S.W. 1, from whom full particulars can be obtained, together with a brochure for medical practitioners on blood-pressure.

and all fumes are carried away by the flue; is unbreakable, durable, portable, and can be used for cooking, heating rooms, providing water for hot bottles and the like. It is an excellent means for rapidly drying damp rooms, and will be much appreciated for use in bungalows and camps. Moreover, it has found much favour for warming garages, greenhouses and conservatories.¹

A TENT FOR THE OPEN-AIR LIFE.

In the maintenance of the open-air life there are many difficulties under modern community conditions. The housing difficulty is likely to remain for a long time to come. The price of wooden shelters has



THE ELYSIUM TENT.

increased enormously. Tuberculous and tuberculously-inclined persons may, however, secure tents at reasonable rates, and these can often be adapted to meet the needs of those who require to sleep under out-of-doors conditions. Our attention has recently been directed to the ELYSIUM TENT, an illustration of which is appended.²

¹ The Victory Stove is manufactured by the Wey Engineering Company, Limited, 4, Bank Buildings, Weybridge, Surrey, and can be obtained through the T.B.S. Electrical Construction Company, Ltd., 68, Victoria Street, Westminster, S.W. 1. The price is £2 17s. 6d.

² The Elysium Tent is supplied by the firm of Thomas Black and Co., 25, Cathcart Street, Greenock, Scotland, who also provide sleeping balconies and porches, hammocks, chairs, and like equipment for the home treatment and sanatorium management of patients.

THE LEVERLITE POCKET LAMP.

For doctors, nurses, and patients a reliable electric torch is a valuable companion. Indeed, in hospital, sanatorium, and colony work a convenient form of handy lamp is almost indispensable. An excellent and inexhaustible form has recently been brought to our notice, and



THE LEVERLITE POCKET LAMP.

after due trial we have no hesitation in strongly commending the LEVERLITE ELECTRIC POCKET LAMP.¹ By a simple movement of the hand a lever is set in action and works a small self-contained dynamo. There is no bother about refills. The mechanism is not likely to get out of order. A brilliant light can always be relied on, and the whole appliance is compact and easily fits into the pocket.

THE RAWLPLUG.

THE RAWLPLUG is a simple, inexpensive, ingenious contrivance which will be much appreciated in hospitals, sanatoria, open-air schools, and the like, as well as in modern private dwelling-places and public buildings. Many walls are now constructed of concrete, cement, stone, brick or plaster into which nails and screws cannot well be inserted. The Rawlplug consists of a tube of stiffened fibre which automatically expands when a screw is driven in. The fixing is quite simple: a small hole is drilled and the Rawlplug pushed into position and into this the necessary screw is inserted. The new method does away with extensive chiseling, wedging, cementing, and use of blocks, and avoids damage to the wall or existing decorations. Rawlplugs are supplied of various sizes and outfits can be obtained containing all that is necessary for practical service.²

¹ The Leverlite Pocket Lamp is supplied by the Leverlite Lamp Co., 30, New Bond Street, W. 1. Price £3 10s. in art metal, and £2 2s. in aluminium. A model is now available at £1 10s.

² The Rawlplug is supplied by the Rawlplug Company, Ltd., Lenthall Place, Gloucester Road, South Kensington, S.W. 7. A simple outfit can be provided at 5s. 6d. The complete outfit costs £2.

HYGIENIC AND THERAPEUTIC PREPARATIONS.

L'ODORIGÈNE is a neat, compact pocket companion, consisting of a screw-capped glass bottle, one-and-a-half inches long, with a wick inserted in the centre of the cap, enclosed in an outer nickel or silver-plated casing with a perforated cover.¹ It is an artistic, novel, and pleasing appliance for the provision of an antiseptic inhaler. Indeed, it provides a means whereby various forms of medicated vapour or acceptable perfumes can always be kept on the person and available for immediate use.

A new form of deodorant and antiseptic has been introduced under the designation of "OSONATOR." It is adapted for hanging on the wall in sick-rooms and general apartments, and not only assists in purifying the air, but would seem to keep away flies and moths, etc.²

The CROOKES' COLLOSOLS have found much favour as providing an efficient means for the administration of certain drugs of proved therapeutic value.³ Collosol Iodine has been referred to in this journal as an excellent preparation in tuberculosis, and now there has been introduced Collosol Ferro malt, which is a particularly serviceable agent in the treatment of consumption and other forms of tuberculosis. It can also be obtained in combination with hypophosphites and glycerophosphates.

Decalcification is considered, especially by French authorities, an important factor in the progressive wasting met with in so many cases of tuberculosis, and based on this view there are good grounds for the use of calcium preparations. TRICALCINE⁴ is a new form which has met with much favour in France. It is a tribasic phosphate and carbonate of lime and magnesia, and is supplied in tablets, cachets, and powder.

IODICIN is a calcium salt of iodo-ricinoleic acid, and contains a high percentage of iodine in organic combination.⁵ It is tasteless, odourless, and does not give rise to gastro-intestinal irritation, and can be administered over long periods without symptoms of iodism arising. It is available in capsules, and has been found of service in tuberculosis, and particularly when occurring in syphilitic subjects.

"MAGISAL" is a new soluble, bland, and very effective aspirin preparation. It is a neutral salt of aspirin and is free from all unpleasant taste, is quickly absorbed, and acts rapidly as a reliable antipyretic and antineuralgic. It brings relief in many febrile conditions, especially



L'ODORIGÈNE.

¹ L'Odorigène is supplied by L'Odorigène Co., 30, New Bond Street, W. 1. Price: nickel 2s. 6d., gilt 5s., silver 25s.

² The "Osonator" is supplied by Dr. G. Haskell, 3 Ashford House, Puma Court, Commercial Street, E. 1. Price 18s. per doz. A sample will be sent for 2s. 6d. post free.

³ Full particulars regarding all forms of Collosol preparations can be obtained on application to The Crookes' Laboratories, 22, Chenies Street, Tottenham Court Road, W.C. 1.

⁴ Tricalcine is manufactured at Dr. E. Perraudin's Laboratoire des "Produits Scientia," 10, Rue Fromentin, Paris, and samples and particulars will be supplied to British medical practitioners on application.

⁵ Iodicin is supplied in the "Tabloid" series of Burroughs Wellcome and Co., from whom full particulars regarding its action and uses can be obtained.

those connected with influenza and infectious catarrhs, rheumatism, and some forms of headache and other functional derangement. It is an agent which is often of service in meeting many of the intercurrent minor ailments common in tuberculous subjects.¹

METAGEN is a combination of the recognized types of water-soluble and fat-soluble vitamins, and appears likely to be of assistance in dealing with some cases of tuberculous and tuberculously disposed children.²

BISMUTOSE is a new combination of bismuth and albumin which has proved of service as a sedative and antacid in various gastrointestinal affections, and seems likely to be of assistance in some tuberculous cases where there is intestinal involvement.³

HEMOSTYL is the sterilized horse serum prepared for use in carrying out Dr. Roussel's "hæmopoietic serum treatment." It is of special service in dealing with the primary anæmias, but has also proved advantageous in the secondary anæmia met with in tuberculosis and other wasting and febrile diseases.⁴

The well-known firm of Boots have issued an excellent series of special preparations particularly suitable for service in the treatment of pulmonary tuberculosis and other chest cases. Among them are the following: "Linctus Heroini, Pini et Terpini Hydratis," a palatable, stable, sedative antispasmodic and expectorant of exceptional value in the useless cough of phthisis and other morbid conditions of the lungs and respiratory passages.⁵ Reference may also be made to "Tusamiga," a preparation of vinegar of ipec. and squills, with hydrochloride of morphia and dilute hydrocyanic acid. "Pertusa" is a pleasantly flavoured preparation of fresh thymus vulgaris in an aromatic and demulcent base. "Grindelix" contains liquid extract of grindelia, tincture of euphorbia pilulifera, with potassium iodide and trinitrine. Another useful preparation particularly serviceable in tuberculosis is one containing syrup of the glycerophosphates with pepsin and formates of potassium, sodium, and calcium.

The special serums and other products provided by the laboratories of Fraisse and Co., 8, Rue Jasmin, Paris, can now be obtained in this country.⁶ A neat "Emergency Medical Pocket Case" is also available containing a syringe and a series of therapeutical agents ready for immediate injection.

Under the designation "OLEUM ELLIOTT" there has been introduced a new laxative.⁷ The oil is expressed direct from the East African croton seed, and its action has been investigated by Professor Cash in conjunction with W. J. Dilling.

¹ "Magisal" is supplied by W. Martindale, 10, New Cavendish Street, W. 1, in 5-grain tablets and put up in bottles of 25, 100, and 1,000.

² Metagen is supplied by Parke Davis and Company, 40, Beak Street, Regent Street, W. 1, who also provide an illustrated booklet giving a useful bibliography of the most important papers which have been published on vitamins.

³ Bismutose is supplied by A. and M. Zimmermann, Ltd., 3, Lloyd's Avenue, E.C.

⁴ Full particulars regarding Hemostyl and its administration can be obtained from Wilcox, Jozean and Co., 49, Haymarket, London, S.W.

⁵ Particulars regarding the Boots products can be obtained on application to the Boots Pure Drug Co., Ltd., Nottingham.

⁶ Messrs. Wilcox, Jozean and Co., 49, Haymarket, are the general agents for "Laboratoires Fraisse," and will send full particulars regarding any of the Fraisse specialities on application.

⁷ "Croton Elliottianus Oil" is supplied by W. Martindale, 10, New Cavendish Street, W. 1, in capsules, each containing $\frac{1}{2}$ minim of the oil.

THE OUTLOOK.

TUBERCULOSIS AND THE MINISTRY OF HEALTH.

THE Ministry of Health issued on February 10 the following two letters: (1) "I am directed by the Minister of Health to refer to his Circular Letter of September 15, 1919 (Circular 19), and to state, for the information of the Council, that the Ministry of Pensions have been in communication with him in regard to the question of the payment of fees to tuberculosis officers for furnishing, in respect of certain classes of tuberculous ex-service men, certificates of incapacity for remunerative work, in order to enable treatment allowances to be paid by Local War Pensions Committees. The furnishing of such certificates was not included in the functions set out in paragraph 2 of Circular 19, which Tuberculosis Officers were asked to perform in the capacity of Medical Referees to the Ministry of Pensions, for the reason that in the case of tuberculous ex-service men, as distinguished from those suffering from other disabilities, treatment is provided by Insurance Committees and not by Local War Pensions Committees. It was understood, when Circular 19 was issued, that, to enable treatment allowances to be paid by Local War Pensions Committees, it would be sufficient if such committees were informed whether in the case of each tuberculous ex-service man (a) awaiting residential treatment, or (b) receiving domiciliary or dispensary treatment, the Insurance Committee's Medical Adviser considered the man unable to work at a remunerative occupation, a period of thirteen weeks being certified in cases under (b); and it was contemplated that this information could be conveniently supplied to the Insurance Committee by the Tuberculosis Officer in conjunction with the recommendations for treatment made by him from time to time to the Insurance Committee, the necessity for a separate examination for the purpose of certifying incapacity for remunerative work being thus avoided. Insurance Committees were accordingly, at the date of the issue of Circular 19, asked to arrange for the supply of this information; and it was not intended that any special fee should be payable by the Ministry of Pensions for the information so supplied. It is understood, however, that the procedure has not, in practice, been found to operate satisfactorily, and it appears that this has been due in part to local misunderstanding of the procedure, and in part to special references by Local War Pensions Committees to Tuberculosis Officers in regard to the question of incapacity for work being found unavoidable in certain circumstances. Upon the termination of sanatorium benefit, recommendations for treatment of ex-service men suffering from tuberculosis will no longer require to be made to Insurance Committees, and communication by the Tuberculosis Officer with the War Pensions Committee will, therefore, be necessary in every case. It is accordingly intended to take account of this service in fixing the lump sum payments to Local Authorities for all special services rendered by Tuberculosis Officers in connection with the pensions and allowances of tuberculous ex-service men, to which

reference was made in Circular 140 of October 14 last, and which it is hoped to introduce immediately upon the termination of sanatorium benefit. In the meantime, however, in view of the postponement of the termination of sanatorium benefit to May 1 next, the Ministry of Pensions have decided to recognize any certificate of the nature in question furnished by Tuberculosis Officers on or after January 1, 1921, whether to the Insurance Committee or, on occasion arising for direct reference to the Tuberculosis Officer by the War Pensions Committee, to the latter Committee, as eligible for a fee of 2s. 6d. In regard to the amount of this fee the Minister may point out that, in the case of ex-service men suffering from other disabilities, a fee of 5s. is paid by the Ministry of Pensions to the Medical Referee for furnishing to the War Pensions Committee a combined recommendation for treatment and certificate as to incapacity for work. In the case of the tuberculous ex-service man, however, the Tuberculosis Officer is already under an obligation to furnish recommendations for treatment to the Insurance Committee, and it should be practicable on a majority of occasions to avoid a separate examination for the purpose of furnishing a certificate of incapacity for remunerative work to the Local War Pensions Committee, by whom, in the case of the tuberculous ex-service man, a recommendation for treatment is not required. For these reasons the Minister is in agreement with the Ministry of Pensions that a fee of 2s. 6d. represents a reasonable payment for the required certificate. I am at the same time to forward herewith, for the information of the Council, a copy of a circular letter which has to-day been addressed to Insurance Committees in England with reference to the provision by Local War Pensions Committees of special diet for ex-service men suffering from tuberculosis attributable to or aggravated by war service, and receiving treatment otherwise than in a residential institution."

(2) "I am directed by the Minister of Health to state that he has had under consideration the Circular (No. 1052) issued by the Ministry of Pensions to Local War Pensions Committees on August 16 last, in regard to the provision of special diet as a part of treatment afforded to ex-service men suffering from disabilities attributable to or aggravated by war service. The Minister understands from the terms of the circular that if an ex-service patient, whose disability (whether tuberculosis or any other disease) is attributable to or aggravated by war service, is under treatment otherwise than in a residential institution, and is recommended by the practitioner undertaking the treatment to take special diet as part of the treatment, it is for the patient, if he claims the cost of such diet to be greater than that of his normal dietary, to make application to the Local War Pensions Committee for the provision of such diet, after obtaining from the practitioner a certificate upon a form procurable by the patient from the War Pensions Committee. The claim will then be dealt with by the local officers of the Ministry of Pensions, and the provision authorized will be made by the Local War Pensions Committee. In view of these instructions of the Ministry of Pensions, it will not be necessary, in the case of ex-service men suffering from tuberculosis attributable to or aggravated by war service, that Tuberculosis Officers in examining cases for the purposes of sanatorium benefit should continue to make recommendations either to the Insurance Committee or to the War Pensions Committee (as may have been locally arranged) in regard to

the provision of extra nourishment, and the procedure set out in the Insurance Commissioners' letter of December 4, 1918 (I.C.L. 242), under the heading 'Extra Nourishment,' should therefore be discontinued. Where, however, an ex-service man suffering from tuberculosis attributable to or aggravated by war service is not under treatment by his medical attendant, but is receiving treatment from the Tuberculosis Officer at a tuberculosis dispensary, it will be open to the Tuberculosis Officer, if he considers it desirable that extra nourishment should be provided as part of the treatment, to furnish the patient (on the form referred to above) with the certificate necessary to enable him to claim any allowance of this nature from the War Pensions Committee; but there will be no occasion for the Tuberculosis Officer in any other case to take action in regard to the provision of special diet for ex-service men suffering from tuberculosis attributable to or aggravated by war service. A copy of this circular has been sent to the councils of administrative counties and county and metropolitan boroughs for their information, and I am to forward for the information of the Insurance Committee the accompanying copy of a circular letter which has to-day been addressed to those councils relative to the payment of fees to tuberculosis officers for furnishing certificates as to the incapacity of tuberculous ex-service men to work at a remunerative occupation."

Dr. Christopher Addison, late Minister of Health, in the House of Commons on March 18 introduced the Public Health (Tuberculosis) Bill, 1921, "to make further provision with respect to arrangements by local authorities for the treatment of tuberculosis." The Bill seeks to secure that there shall be no break in the provision made for the treatment of tuberculosis when sanatorium benefit ceases on April 30. It is proposed to transfer to the county and county borough councils the obligation for providing institutional treatment for tuberculosis, which, under the provisions of the National Health Insurance Act of last year, is to be taken from the insurance committees so far as insured persons are concerned. A small proportion of the total number of councils have not as yet made adequate provision for the treatment of tuberculosis, and the Bill provides that, if any of these councils fail to make proper arrangements, the Minister of Health may himself make such arrangements as may be necessary for the purpose and recover the cost from the councils in question. The remaining provisions of the Bill are designed to facilitate co-operation between councils in the exercise of their power for the treatment of tuberculosis, and to enable them to co-opt on their tuberculosis committees or sub-committees persons, including members of insurance committees, who are not members of the councils. It is proposed that the councils should receive the same financial assistance in aid of this service as they have received in the past under the old arrangement.

The Ministry of Health have recently issued further communications relating to tuberculosis. Circular 190 deals with treatment, particularly in view of the new arrangements which are to come into force on May 1. Memo. 30 T furnishes data regarding "special arrangements to be made on and after May 1, 1921, for the provision of treatment in residential institutions and of other services for tuberculous ex-service men in England." Memo. 31 T deals with "financial arrangements to be made on and after May 1, 1921, in regard to the schemes of local authorities for the treatment of tuberculosis in England."

NOTES AND RECORDS.

THE International Union against Tuberculosis, acting in association with and under the auspices of the National Association for the Prevention of Tuberculosis, will hold the next International Conference in London from Tuesday, July 26, to Thursday, July 28, inclusive. The Conference will be open to members of the International Union against Tuberculosis, and to delegates from countries within the League of Nations, and from the United States of America. The President of the International Union for the current year is Monsieur Léon Bourgeois, President of the French Senate, who will be succeeded on the occasion of the Conference in London by Professor Sir Robert Philip, of the University of Edinburgh. It is hoped that the opening address of the Conference will be given by Monsieur Léon Bourgeois. The arrangements for the Conference are under the charge of the Executive Committee of the International Union, in correspondence with the Council of the National Association for the Prevention of Tuberculosis. The subjects proposed for discussion include the following: (1) "The Modes of Diffusion of Tuberculosis throughout the Races of the World," to be opened by Professor Calmette; (2) "The Rôle of the Medical Profession in the Prevention of Tuberculosis." This announcement is made in the name of the International Union by Dr. Léon Bernard, the Secretary, and further particulars may be obtained on application to 20, Hanover Square, W. 1

The North of England Tuberculosis Society have arranged, with the kind co-operation of Dr. Ed. Rist, for a Post-Graduate Course of Lectures and Demonstrations in Paris on X-Ray Diagnosis of Pulmonary Tuberculosis, the Effect of X-Ray Experience on Ideas regarding the Pathology of Pulmonary Tuberculosis, the Extent to which War Experiences have affected Views on the Diagnosis of Tuberculosis of the Lungs, Experimental Re-infection and its Bearing on the Pathology and Diagnosis of Phthisis, Artificial Pneumothorax, and Modern Dispensary Work. The fee is 200 francs. The course will last nine days. The party will travel to Berck-sur-Mer on May 17, and the following day go on to Paris. Full particulars may be obtained from the hon. secretary, Dr. W. H. Dickinson, 91, New Bridge Street, Newcastle-upon-Tyne.

In connection with the forthcoming Conference of the Royal Institute of Public Health, to be held in the Guildhall of the City of London, June 2 to 4, on Saturday, June 4, at 10 a.m., a session will be devoted to the discussion of "The Efficiency of the Present Machinery for Dealing with Tuberculosis." Professor Sir Robert W. Philip will preside, and among those who have promised to speak are Professor S. Lyle Cummins, Professor Sir G. S. Woodhead, Dr. Noel D. Bardswell, Major David Davies, M.P., Sir Henry Gauvain, M.D., Dr. T. Hartley Martin, Dr. J. J. Perkins, Lieut.-Colonel Nathan Raw, C.M.G., M.D., M.P., Dr. P. C. Varrier-Jones, and Dr. Jane Walker. Tuberculosis officers and all others interested in present-day efforts to secure the prevention and arrest of tuberculosis should make a point of being present.